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THE RUBBER AGE

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It Is the Man More Than the Plan that Counts in Industrial Relations

By J. E. Bullard

"It was not the Roman legions," said Napoleon, "which conquered Gaul but Caesar. It was not the Carthaginian soldiers who made Rome tremble but Hannibal. It was not the Macedonian phalanx which penetrated India, but Alexander. It was not the French Army which reached the Weser and the Inn, but Turenne. It was not the Prussian soldier who defended their country for seven years against the three most formidable powers of Europe, it was Frederick the Great."

The life of Napoleon shows that he believed this and it was not the soldiers of the Napoleonic armies that won the victories that made Napoleon the most powerful ruler in the world but Napoleon Bonaparte, himself. It was not the bare footed soldiers at Valley Forge who won the Revolutionary War but George Washington. It was not the volunteers in the Union Army who turned the tables and brought victory to the North in the Civil War but General Grant who insisted on "fighting it out on these lines if it takes all summer."

Leadership the Dominant Factor

Great military victories have always been due to great leadership. It is the man who does the directing and the leading, the planning and the thinking who counts more than the rank and file. No matter how good the plan may be, no matter how high the average ability and bravery of the rank and file, if the man at the top fails to meet the situaion all is pretty sure to be lost.

A study of industrial relations, of profit sharing plans, of industrial welfare schemes, of corporations both large and small indicate that the success of all these depend in no small degree upon the man at the top. A man like Sir William Lever will make a success of a plan that may prove a failure in some other organization. It is not the plan that is at fault so much as the ability of the man who is putting it into operation to sell it to the people who are to be benefitted by it.

It is probably safe to say that no industry has been so progressive, has been more careful in working out its industrial relations plans, or has adopted better methods than has the rubber industry of America. The war, however, brought this industry to its Valley Forge in so far as industrial relations are concerned.

An industrial engineer who has been in close touch with the industry when questioned talked pessimistically indeed about the future of some of these methods and plans. His conversation made it easy for one to imagine what some of those soldiers and perhaps also some of those officers at Valley Forge thought and said. It is evident that a Washington is needed to make those plans and methods bear the fruit that they should bear.

Repetition of Present Conditions Unlikely

It is not the plans and the methods that are at fault. They are for the most part at least perfectly sound. It has been the conditions that have made them appear less effective than they were hoped to have been. The rubber industry has been passing through the most trying period in its history. It will probably never again be faced with the same conditions.

The sort of spirit that is needed today especially in regard to labor is the spirit that Marshal Foch displayed when he telegraphed at the beginning of the war to G. H. Q.. "My center gives way; my right recedes: the situation is excellent. I shall attack."

In some cases where the companies have been selling their stock to the employes on a partial payment plan there has been real hardship both for the company and the employes. Other plans for improving the relations between employers and the workers have failed to a certain extent because of the conditions.

Nothing Wrong with Plans

All this, however, does not mean that there is anything radically wrong with the plans any more than the conditions at Valley Forge meant that the cause of the Colonists was hopeless. It does mean, however, that good leadership is required, good salesmanship. It is now simply a matter of selling all those plans and methods to the employes again. In many cases it is going to be a lot harder to do so than it was to sell them in the first place.

There, however, is an advantage in this. Once re-arouse the enthusiasm of the workers in these plans and methods, once demonstrate to them that the company believes in those plans and is going to continue to carry them on and those plans and methods are going to accomplish far more in the future than they possibly could if the conditions of the past year had never existed. On the other hand lose faith in them, go back to the old time methods and practices, take it for granted that the time is ripe to really take advantage of labor as it is being taken in some quarters and all the good work that has been started is dropped, then industrial warfare is being encouraged rather than discouraged.

Faith Is Essential

Try to visualize just what the United States would be like today if George Washington had lost faith when everything looked the darkest. It is certain that we would not be the nation of self-confident, enthusiastic, progressive people we are today. We would not be able to win the respect and confidence of the whole world to the extent that we have won it.

What would Paris look like today if when Marshal Foch was suffering reverses he was content to continue to retreat instead of taking each and every opportunity to attack? It was courage and leadership that won. In the course of the War for Independence there were plenty to talk of the helplessness of the cause and to foretell failure. During the last war there were not a few who were willing to admit that Germany would win.

Today there are many employers of labor that insist that the old methods are best. They tell us that when labor has the advantage as it did during the war, it pressed its advantage

and that now when the employer has the advantage that the only course is to make the very best of that advantage. In other words to set the example for labor to take the advantage whenever it can.

These men can point out case after case where fair and just methods have failed. They seem to be able to prove their point. Some concerns who have been very progressive in their methods of handling labor will undoubtedly become discouraged and drop back to more antiquated methods. These concerns will be overlooking one very important point.

Labor expects employers to take advantage now. However, in every case where labor has confidence in the employer there is little if any trouble. Wage reductions are an easy matter. Increased production is a matter of course. It appears largely to be a matter of proving to labor that the company is and wants to be fair and does not desire to take an undue advantage of labor even though it may be able to do so.

In a certain industry just after the war there was a great unionizing movement. In a number of states there was no trouble in organizing the unions. Finally a large city was reached where no union had been formed among the employes. A great mass meeting was held. The leading company in that city paid no attention to the efforts being made to organize the union. If employes wanted to attend the mass meetings they could. If they wanted to form a union they were left free to do so.

Those employes, however, were thoroughly sold on the policy of the company. They championed these policies and the mass meetings finally broke up just before the union organizers and the employes came to blows. The employes were convinced that they already had more than the union could possibly get for them. In other words the company was more successful in selling its policy to the employes than were the union leaders.

It is this selling of company policies and methods that is needed more than anything else in industrial management today. A good part of this selling may have to be done with the heads of the concerns. Get the management in the right state of mind and it is not going to be so hard to handle the employes themselves. Allow lack of co-operation or faith in the plans and methods in the management and there is no power on earth that can make the very best plans and methods result in cordial relations between the employer and the employed.

All of our great military leaders have been men of faith and vision. All our great industrial leaders are men of faith and vision. The men who will eventually put a stop to industrial strife will be men of faith and vision. Faith, however, is of the greatest importance. The man of great and abiding faith will accomplish far more than the man of genius who lacks this faith. Those concerns that have faith in their methods of dealing with labor are going to find their relations with labor far more saisfactory than those that lack faith. It matters not what the methods are, just so long as they are fair and the company has faith they are bound to get results. A little wobbling, a little hesitating now and all that has been gained will be lost.

It must not be forgotten that the apparent object of labor today is not so much to prevent wage reductions for in many cases it has taken these reductions voluntarily. It is not so much a matter of shorter hours although they like the fat envelopes that go with overtime, but it is a case of making management show its hand. Faith, vision and leadership are needed on both sides.

The Turkish Market for Rubber Goods

No rubber goods of any sort are manufactured in Turkey. Previous to the war rubber tires and other automobile accessories were supplied by Germany and Austria, but America, England, and France have supplanted the aforesaid countries since the armistice, with America rapidly taking the lead and France closely following.

Distribution in general is conducted as with other accessories —i.e., importers sell directly to the wholesalers, commission men, and large retailers, giving a slight discount according to the quantity purchased.

The demand for rubber tires is proportionate to the automobiles now in use in Constantinople. Their number is increasing continuously.

The most popular sizes of rubber tires are 30 by 3½ inches and 30 by 3 inches.

Separate import statistics for the year 1913 covering rubber tires are not available because these articles were classified under a general heading which included all sorts of rubber goods, except rubber shoes and raincoats.

Demand for Rubber Boots and Shoes

The demand for rubber boots and shoes is limited to overshoes of a light type. Heavy goloshes and boots are practically unsalable in this market. The terms of payment are the same as for all merchandise, namely, cash. America and England seem to have supplanted Russia in supplying rubber shoes to Constantinople.

Importers sell directly to the wholesalers, to commission merchants, and to large retailers.

The market is full of rubber shoes due to the heavy arrivals of last spring, which were supposed to have arrived the previous fall.

Imports of rubber boots and shoes for the year 1913 were as follows: From Russia, $218,779; England, $61,314; United States, $27,566; Austria, $18,315; Germany, $7,620; and France, $5,991.

The estimated imports for the fiscal year July 1, 1919, to June 30, 1920, were as follows: From the United States, $220,500; England, $122,578; and Russia, $3,700.

Other Rubber Goods

There is a good market here for raincoats, rubber soles and heels, toys, etc.

Raincoats are imported mostly by large department stores from England, France, and Germany, the principal importers being the same as for rubber shoes. Import statistics for 1913 only are available, these being as follows: From England, $57,414; Germany, $19,148; Austria, $6,358; France, $2,886; and the United States, $95.

Miscellaneous rubber goods principally druggists' sundries, were imported before the war principally from France, Austria, and Germany. The armies of occupation have sold some of their medical supplies to local druggists.

Rubber soles and heels have only recently been introduced in this market, but they have been received with favor by the local population because the city's hilly and uneven streets are very trying on the feet.

Imports of miscellaneous rubber goods for 1913 were as follows: From Germany, $90,888; Austria, $43,839; France, $56,138; England, $37,664; Italy, $10,752; Russia, $4,389; United States, 1,571. For the fiscal year 1919-20 they were: From France, $4,076; England, $3,042; Italy, $4,336; Russia, $9,100; United States, $818,000.

Mexican Duty on Rubber Tires

According to a cablegram from Consul Cornelius Ferris, jr., Mexico City, April 30, 1921, a decree promulgated April 19, 1921, effective April 23, increased the Mexican duty on rubber tires for automobiles from 1 peso (50 cents) per gross kilo to 1.50 pesos (75 cents) per gross kilo of 2.2 pounds, and on rubber tires for motor trucks from 0.50 peso (25 cents) to 0.75 peso (37½ cents) per gross kilo. (See *Commerce Reports* for Sept. 25, 1919, for earlier announcement of duty on rubber tires.)

The Manufacture of Tire Fabric

By H. R. Whitehead

Superintendent Textile Division, Mason Tire and Rubber Co., Kent, Ohio

The following article is the last of a series reprinted from "The Mason Mail". In the preceeding installments the author discussed various steps leading up to the production of the finished article. This article treats of the concluding operations.

In our previous article we had brought the raw cotton gradually through the various processes to the spinning frame. We are limited by the size of the ring at the spinning frame as to the amount of yarn that may be put upon the bobbin. As it is desirable to have from 15,000 to 40,000 yards of yarn of continuous length, the yarn is taken from the spinning frame and carried to the spooler (Figure 1). The spooler consists of a series of spindles revolving at from 700 to 1,000 revolutions per minute on which are placed the spools. Figure 1 shows boxes of yarn at the spooler ready to be wound on the spools. This is accomplished by placing a bobbin of yarn in the bobbin holder, one end of which is tied to the end on the revolving spool. This is done in a fraction of a second by a mechanical knotter used by the operator. By placing one hand upon the spool the operator stops the spool from revolving, finds the free end on the spool and with the other hand ties the ends of the bobbin and the spool together, releasing the spool, and as the spool gains momentum it rapidly winds the yarn from the bobbin onto the spool. This process is repeated until the spool is filled to its capacity. As fast as the spools are entirely filled they are removed one at a time and placed on the shelf which is shown at the top of the spooler and an empty spool takes its place on the spindle.

FIG. 1. THE SPOOLER

The Twisters

Leaving the spoolers we now call attention to Figure 2 which shows the twister department where the spools from the spooler are taken. On the twister frame from two to sixteen strands of spooler yarn are twisted together forming one strand of yarn. The number of strands of spooler yarn twisted together is dependent upon the quality of fabric to be made. If the fabric to be made is square woven, breaker or chafing strips, the yarn from which it is made is called ply yarn and needs only one process of twisting. However, in cord fabric another process of twisting is needed and two or more of these strands of spooler yarn are twisted into a single strand and then several strands of the resultant are again twisted, forming a cable yarn. In order to make this clearer, a ply yarn is composed of two or more single strands of yarn twisted together and a cable yarn is composed of two or more ply strands of yarn twisted together. The method of twisting is very similar to the spinning frame, with the exception that the yarn is wound upon a spool rather than upon a bobbin.

After the spools are filled with yarn at the twister they are taken to the warp compressor (Figure 3). The spools are placed upon spindles in the creel and upon each individual spool is placed a tension consisting of a weighted paddle

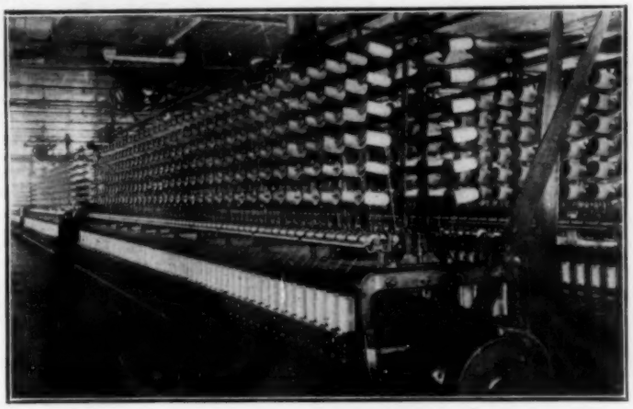

FIG. 2. THE TWISTERS

which presses directly against the spool and upon which in the process of unwinding a pressure is maintained just great enough to keep the yarn taut in winding upon the beam at the front of the compressor. Each individual end from the spools is guided through a hole which can be seen in Figure 3 and then it is carried over a series of rolls, passing through a zigzag or "W" shaped comb, where the yarn must be properly spaced in order that one strand will not pile upon another. These strands are all brought into an even sheet at the extreme front of the machine where they are wound around a loom beam which is very similar to a large spool. As this beam or spool revolves it draws the yarn from the spools upon the beam, and

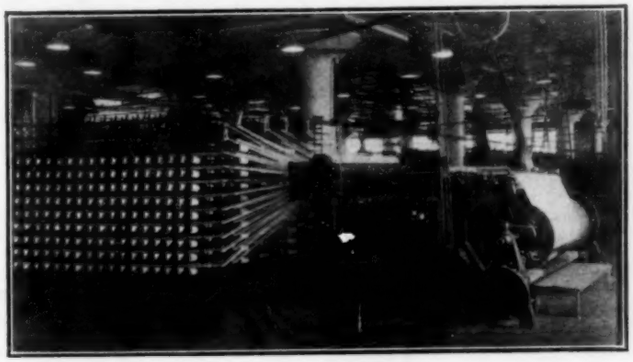

FIG. 3. VIEW OF THE WARP COMPRESSOR

at the finish we have from 1,300 to 2,000 ends laying parallel to each other wound to a continuous yardage on the beam until the beam is filled.

The Last Operation

This beam is taken to the loom, which is shown in Figure 4, and placed in its bearings on the loom. A chain is placed around the loom beam and weighted by levers which holds a

friction upon the beam and releases it proportionately as the cloth is woven. Each individual end upon the loom beam is drawn through an individual eye on the harness and then in turn each strand is drawn through the reed directly in front of the harness which keeps the threads parallel just as it was accomplished at the warp compressor. One-half of the ends are drawn through one harness and the other half through the other and by means of a process of cams the ends on one harness are drawn upward while the ends on the other harness are carried downward, leaving an opening between the cords through which a shuttle carrying a bobbin of filling is passed. This bobbin of filling is so timed that as the harnesses open and close it passes through the opening and immediately upon the closing of the harnesses it is held in the shuttle box until the harnesses open again and then it is thrown by the picker stick to the opposite side of the loom. Figure 4 shows the yarn at the back of the loom and at the front of the loom it will be noticed that the cloth is being wound upon the cloth rook with the filling thread running across the fabric, i.e., all warp yarn runs lengthwise and the filling thread crosswise of the fabric.

FIG. 4. THE LOOMS IN OPERATION.

After the desired amount of cloth has been placed upon the cloth roll it is taken to the inspecting table, where each roll of fabric is inspected and any imperfections that are found are corrected. It is then ready to be delivered to the tire factory, where it is prepared for the manufacture of tires.

While the writer appreciates the fact that it is very difficult to give a clear explanation of the various processes it is hoped that a slight enlightenment has been obtained regarding the manufacture of tire fabric from the raw cotton to the finished product through these articles.

The Belgian Rubber Goods Industry

While rubber manufactories are not numerous in Belgium compared with some other industries, production is varied and some articles which formerly were imported are now being produced in the country.

Rubber companies, like other industries, suffered during the invasion, one plant at Thiant belonging to the Colonial Rubber Co. being badly damaged. Some others were more fortunate. Their plants remain intact although stocks they possessed during the war were carried off. In some cases equipment also was removed. It was the lack of raw material which hindered resumption of operations immediately after the armistice. Needs in this respect, however, have now been largly met.

Important Rubber Companies in Belgium

Among the large rubber companies in Belgium are "Jenatzy-Leleu," which was founded in 1913 with a capital of 1,000,000 francs; Compagnie Generale des Caoutchoues et Terebenthins, for the exploitation of patents relating to rubber, capital 2,500,000 francs; Societe Anonyme pour de Commerce et l'Industrie du Caoutchouc, capital 1,300,000 francs. The capital of the Colonial Rubber Co. at Ghent is 3,500,000 francs.

Another large company is the Atliers de Constructions Electriques de Charleroi, organized in 1904 with a capital of 3,000,000 francs which has since been increased to 20,000,000. Insulated wire and cables are among its products.

Market for Rubber Tires

While tires of local manufacture such as the Englebert and Jenatzy are used on a large number of vehicles in Belgium, American makes are well known and many users prefer them. Other sources of supply are France (Michelin), Italy (Pirelli), and England (Dunlop). The English company enjoys an extensive sale of its pneumatic tires and is a dominant factor in the solid-rubber tire business.

Tires come in all metric sizes. The clincher is the most popular in the Brussels district, a large percentage of cars having this equipment. Local rubber firms are beginning the manufacture of straight sides to compete with the United States. These companies have started to make cord tires. Many tires are sold to dealers on a consignment basis, particularly by French and Americans, while other companies demand cash or give limited credit, varying according to circumstances. Cord tires are used on trucks and heavy cars.

Rubber Boots and Shoes

There is also a good market for rubber boots and shoes in this district. The excellence of American manufacture is here again recognized. Anxious as they might be for American rubber boots and shoes, dealers are confronted with the high exchange of the dollar. As a consequence they turn to the locally manufactured rubber boot and shoe or to French and English makes. Purchases in France are favored by a slight advantage in Belgian exchange. Some houses offer as terms of payment 30 days with 2½ per cent discount, while others 90 days but with no discount. Others insist on cash before delivery, depending on local competition.

Rubber for Industrial Purposes and Other Rubber Goods

In view of the industrial importance of the country, there is a big market for rubber goods for industrial purposes, but foreign manufacturers are confronted with the competition of the Belgian home supply, and in general more favorable prices of local manufacturers. Foreign manufacturers of rubber for industrial purposes are finding it hard to compete with leather products. The conveying system has not been generally adopted in Belgium and should this become in use and the exchange market stabilized the market for this class of goods should develop accordingly. The principal sources of supply are Great Britain and the United States, Germany formerly supplied some goods. Much of the rubber hose is sold to the Government.

Nearly all of the rubber clothing sold in this district heretofore has been of British manufacture, although Belgian firms are now manufacturing on an increasing scale, Englebert among them.

Pirelli, the Italian company, is active in placing hard rubber and insulated wire. Some has been received also from the United States and Great Britain.

Soles and heels have been thus far sold largely of English manufacture, although Belgian manufacturers now have begun to place their products on the market on an increasing scale. English soles and heels are much lower than the American ones.

Matting and friction tape are made locally as well as miscellaneous rubber goods, including druggists' sundries. Some of these goods have been imported heretofore from the United States and England. Rubber toys, formerly imported from France and other countries, are also now being made in Belgium.

Judging Rubber from the Exterior

By Dr. O. De Vries

The external appearance of the rubber is the first thing that is completely abolished in manufacture, and no words need be wasted to prove that it is of no real importance in a raw material that never reaches the consumer in the form in which the market knows it. Still, the thousands of tons of rubber that are handled in European and Eastern markets are judged exclusively—if at all—on the exterior. The hand, tooth, and nail tests, formerly so much in vogue, have gradually lost in importance, as it is now well understood that a little pulling or pressing does not teach us much about what the rubber will be after such drastic treatments as vulcanization or dissolving; but the standardization of the market product according to its outward appearance remains the rule, and the requirements have not become less, nor do they as yet show any tendency to reckon with what the manufacturer really wants or what certain shortcomings really mean.

Judging rubber from the exterior appearance has, of course, in many cases a real importance which nobody will deny, especially when it is coupled with the large experience of the broker. Exclusively judging from the exterior, as is now the rule, can only be based on the conviction that the exterior teaches us in all cases whether the rubber was prepared with sufficient care, and that eventual shortcomings in preparation or properties very soon make themselves felt in appearance. Now it is certainly true that many shortcomings and deviations from the best rules for preparation are visible; but among them there are a large number which are wholly without importance as regards the properties of rubber in manufacture. Such faults arouse an undue amount of suspicion (with the accompanying reduction in price), while some of the principal points in a well-conducted standard preparation have no influence at all on the appearance, and may have been badly neglected in the rubber of the most attractive uniform appearance.

Some Examples

We will illustrate this by some examples.

A standard dilution of the latex and standard methods of coagulating, milling, and drying in general—which are of such vital importance to obtain a product of uniform vulcanizing properties—result, to be sure, in a crop of more uniform appearance. The same may be said of mixing large quantities of latex. But this does not mean that estates which still follow the old, haphazard methods are recognisable on the market by a less uniform product; by a rather extensive sorting such estates grade their rubber according to a number of different colors, often differing only a little in shade, so that the chests may make a very uniform impression when opened for sampling. Nevertheless, the principal rules for securing uniform inner properties have been neglected, and the manufacturer is compelled to make a careful mixing and blending to insure uniform lots. Estates following standard methods deliver a product of which chest after chest shows very nearly the same inner properties.

Poor Methods May Bring Results

On the other hand, very objectionable methods of preparation may give a rubber a good or even excellent appearance. Coagulation with a rather large amount of alum gives very elastic sheets, with a strong feel; yet such sheets vulcanize abnormally slowly, much more slowly than is ever the case with ordinary plantation rubber, while nothing in the exterior warns the buyer against this defect.

Factories which handle, wash, and crepe the rather large amount of stray rubber in the East, such as lots of every description from native holding, remnants of plantation rubber, and the scrap of the Eastern industry in general, succeed remarkably well in working these very different grades into a few types of rather thick crepe of uniform color and appearance. Unless great care is taken in sorting before mixing the different grades, such crepes may show very variable vulcanizing properties, because native rubber is prepared in so many different ways, from a fairly good procedure with acetic acid to the most reprehensible abuse of alum.

To give a still stronger, though hypothetical, example take the following:—Suppose that during the scarcity of acetic acid in the beginning of the war, estates had lacked the help and advice of institutes able to test the rubber, and had sought their own ways. The use of a coagulant such as the naturally acid water from the Kawahidjen would have presented itself very readily. A crepe of good, rather pale appearance would have been obtained, which doubtless would have been welcomed on the market. It would have been only after months that a tackiness would have begun to develop, which in a few years would have led to complete decay. Such rubber contains the germs of slow but sure deterioration, but nothing of it is visible on the exterior.

Outward Appearances

In these cases—to which many others might be added—rubber of good appearance, which fulfills all the demands of the market, may show medicore, or even very inferior, inner properties. Many cases may also be mentioned in which rubber is rejected or depreciated because of faults in outward appearance which have nothing to do with properties of real importance, and which only constitute insignificant unevennesses which are completely levelled up during the mixing and further operations in manufacture.

Faults, such as an irregular pattern on sheets, for instance, when the ribs on front and back do not coincide exactly, further folds, or an uneven ridge at the edges or the end of the sheet, too many small holes in the crêpe, etc.—faults which have nothing at all to do with the rubber itself—luckily do not attract the same amount of attention as in former years, and are nowadays seldom heard of as giving rise to claims. Another quite innocent fault, viz., gas bubbles or air bubbles in the sheet—the inclusion of an indifferent gas—are still regarded with some suspicion. Light cases pass the judges, but rather heavy cases are still rejected by those who perhaps would object still more strongly (if they knew) to the means by which these bubbles have to be prevented, viz., the use of more acetic acid in coagulation. They would, if they had the choice, quite unhesitatingly prefer coagulation "without the aid of acid"—that is, spontaneous coagulation, in which in reality more acid is formed than one usually adds in the form of acetic acid, and which—striking example of unreasonableness of such claims—gives a coagulum so porous that it cannot be worked into sheet because of the numerous gas bubbles.

Rustiness on Sheet Rubber

Small traces of rustiness on sheet rubber give rise to claims, though the decomposition of serum substances on the surface of the wet sheet is quite innocous, and does not lead to more dangerous products than the decomposition that always takes place when the coagulum is kept overnight, and by which vulcanization is slightly accelerated. Only in the case of rustiness the resultant small amount of a harmless jelly-like substance dries up on the surface and becomes visible to the keen and suspicious eye of the rubber expert, while the decomposition products formed by similar causes in the interior of the coagulum or sheet remain invisible. Such decomposition passes unheeded, regardless of whether the micro-organisms were at work only a few hours, one night, or two or more days before their action was stopped by milling or drying. The invisible difference produced by natural accelerators, which may make itself felt in vulcanization, is nothing to the market standard, while the almost unweighable amount of an indifferent substance such as a slight rustiness on the outer surface—how insignificant compared with the loads of fillers that will later have to be in-

The Rubber Age, London

corporated into the rubber—bars the way to the title of "prime" or "standard" quality.

In preparng crêpe rubber, sodium bisulfite has to be used to obtain an even and pale colour; otherwise a discoloration takes place on the surface of the coagulum and the crêpe becomes somewhat more brown and often streaky. This discoloration is caused by a very small amount of strong coloring matter, produced not from the rubber itself, but from one of the serum substances. An oxidation takes place, it is true, but it is not the rubber that is oxidized. Any influence from the coloring matter on the vulcanizing properties of the rubber has thus far not been detected; and then, how little influence such a trace of a foreign substance can have, compared with the amounts of pigment that are added in the manufacture of many articles. The use of bisulfite does no harm, as was formerly supposed by some, but it augments somewhat the costs, and would seem superfluous in many cases.

Similar remarks also apply to many of the spots caused in crêpe or sheet by micro-organisms; often a trace of a strong coloring matter is formed, which is very striking to the eye, but does no harm to the rubber. Though a claim is justified in many cases when the arrangement was to deliver rubber free from spots, the reduction in price would often seem wholly out of proportion to the real depreciation in quality. In contrast to such cases stand others in which a real deterioration of the rubber has indeed taken place. When an estate recrêpes such rubber to get rid of the spots, the resulting (perhaps somewhat darker) crêpe, which is really inferior, is received on the market without objection.

The idea of testing all rubber as it comes to the market, and selling it on certificate of quality, was very thoroughly gone into in 1913 and 1914, but the amount of work and cost of testing all rubber in a relatively short time were found to be too great. Still, something might certainly be done in a simpler form. For instance, guarantees or certificates might be issued by estates which strictly adhere to standard methods of preparation and have their product regularly tested and controlled. It would still have to be proved whether such certificate rubber could awaken an interest on the market which—and that for sound reasons—changes its habits only slowly, and after due deliberation.

Still, as most of the present prejudices are presumably caused by a lack of sound knowledge of the properties of rubber, and of their real importance in preparation and manufacture, we hope that the spreading of such knowledge of rubber as is at present available may be of some benefit to the industry.

A Plan to Change the Law of Contracts

By Elton J. Buckley

I am told that there is shortly to be brought before the business interests of the country, particularly the organized business interests, a plan of modifying the settled law as it relates to the making of business contract or the giving of orders for merchandise.

The plan is to change the law at two points. It is the law now, everywhere, that when a contract is in writing, the verbal understandings which were had by the parties before it was signed cannot be allowed to come into the case, even though they would show that the written paper wholly contradicted the understanding which one of the parties had. This is on the theory that the signing of a contract or the giving of an order is almost always preceded by a lot of desultory talk—bargaining, in other words—but the real intentions of the parties are supposed to be finally crystallized in the written paper, whatever it is. It is both parties' business to see that the written paper really does express those intentions, and if he fails in that, he can't fall back on verbal understandings.

The plan now under way would change all this by allowing any party to a business deal to introduce all the testimony he had as to the talk, salesman's representations, etc., that went on before the contract or order was actually signed. This is really a most important proposition. In literally thousands of cases if a man who signed an order without carefully reading it, having been led to believe by somebody's representation that it was wholly different than it was, could have been allowed in court to tell just what those representations were, the jury would have undoubtedly given him a verdict. As it was, he was not allowed to tell what the representations were and as soon as he admitted he signed the paper, there was nothing to it but to render a verdict against him.

The second proposed change is more change in business practice than a change in the law. Every reader hereof knows that very often contracts and order blanks which he is asked to sign contain a lot of small type provisions which are usually the weasel provisions—the conditions, and the strings which are deliberately put in there to give loopholes to the man who drew the contract. Insurance policies are notorious for this. The people that put in these small type provisions do so knowing that they won't be read, and they are right. Almost nobody reads them, but they are bound by them nevertheless, as thousands of parties to contracts have found to their cost.

(Copyright, December, 1920, by Elton J. Buckley.)

The new plan is to compel everybody who draws up a contract for the sale of any sort of personal property to print *all* the matter in it in 10-point type, which is two sizes larger than the ordinary body type of a newspaper. Special weasel paragraphs are to be printed in even larger type than 10-point.

I reproduce the full text of the Virginia act here. In this form it will be presented to all other legislatures, and also to Congress:—

1. Be it enacted by the General Assembly of Virginia, That no contract in writing entered into between a citizen of this State and any person, firm, company or corporation, domestic or foreign, doing business in this State, for the sale and future delivery of any goods or chattels, machinery or mechanical devices, or personal property of any kind or sort whatsoever, shall be binding upon the purchaser where the form is printed and furnished by the person, firm, company or corporation, unless all of the provisions of such contract are clearly and plainly printed or written; and, where printed, such provisions and convenants and all stipulations as to the rights of the vendor shall be in type of not less than the size known as 10-point; and wherever in such contract, printed upon a form furnished by the vendor, it is stipulated that said vendor is not to be bound by any verbal agreement or modification of the terms of such printed contract, then such stipulation shall be printed as a separate paragraph or paragraphs and in type not smaller than pica. Should any of said contract, including the special stipulation hereinbefore mentioned, be printed in less than the size type hereby prescribed, and the agent or salesman of such person, firm, company or corporation enter into any verbal or written collateral agreement with the vendee, on the part of the person, firm, company or corporation, modifying or changing said printed agreement or the parts of said contract which are printed, then the vendee may, in any action instituted to enforce such contract, or the payment of any sum of money agreed to be paid under said contract, be allowed to introduce such collateral agreement, or contract in modification thereof, or any verbal statement made by said agent or salesman in modification thereof, in evidence in such action, and the same, if proved, shall be considered by the court or jury trying the case as a part of such printed contract.

Exports of Rubber from Straits Settlements

The following figures show the approximate exports of Para rubber from the Straits Settlements in 1920 by countries of destination, as published in Finance and Commerce:

Destinations.	Pounds.	Destinations.	Pounds.
United Kingdom	95,936,100	Australia	1,235,400
Europe	16,591,600	Other countries	436,700
Japan	13,477,300		
Ceylon	577,400	Total	426,203,200
United States and Canada	297,948,700		

Rubber Sponges, Their Manufacture and Uses

The methods of making rubbers sponges are very numerous. The process which is generally considered as being the best from the technical standpoint consists in mixing with the rubber a substance, such as, ammonium carbonate, which dissociates at the temperature of vulcanization, producing thereby large quantities of gases which are responsible for the porous structure of the sponge. Many formulae have been devised for this manufacture.

Huebner's formula, which is used extensively in the United States, is made up as follows:

Rubber—plantation crepe	60	parts.
Resin oil	5	"
Zinc oxide	10	"
Turpentine	10	"
Sulfur	5	"
Ammonium carbonate	10	"

The mixture is worked up in the rubber mixing machines between hot rolls, until it becomes completely plastic. It is then given a red color by the admixture of cinnabar of antimony or Venetian red, or better still the calcium lake of paranitraniline red. In European practice, amyl acetate is used generally instead of the ammonium carbonate.

A German process, used extensively during the war, consisted in treating 70 parts of the rubber in plantation sheets with 7 part of colloidal sulfur, 5 parts of vermillion, 7 parts of zinc oxide, 1 part of mineral wax and 10 parts of amyl acetate. It is possible to substitute butyl acetate, which is less costly, for the amyl acetate, and the paranitraniline lake for the poisonous vermillion (mercury oxide).

The manufacture of rubber sponges is a routine operation in rubber factories, which is quite easy to carry out and does not present greater technical difficulties than the fabrication of molded rubber articles in general. The crucial points in the process is in the preparation of the plastic mixture. If that is done properly, then the rest is simple. In the mixing of the ingredients, the gum should be brought to an advanced stage of polymorization by prolonged mastication between the rolls of the mixing machine. Only when this is done, can a regular distension in the rubber sponge be obtained. The desirable degree of plasticity can be procured by using heated mixing rolls.

Rubber Moss

Several years ago an inventor named Pfleumer brought out on the market a variety of rubber sponge, which resembled ordinary moss and consequently created quite a stir in the rubber industry. He obtained this material by vulcanizing very plastic rubber under 2 to 800 atmospheres pressure in an atmosphere of an inert gas, such as nitrogen. This very high pressure was applied only for a few minutes in the first part of the heating process. When the pressure was released, the rubber had swelled up to several times its original volume, due to the distensive effect of the gas. The process of heating is then completed and a product is obtained, which has about 18 times the volume of the starting material.

Because of certain mechanical difficulties it is very hard to make articles of large size by this process. Nevertheless, it is possible to obtain cylinders 24 cm. in diameter and slabs 30 meters long, 3 meters wide and 30 c.m. thick. Because of the high pressure used, the process is more or less dangerous, as may be expected.

The American Process for Making Rubber Moss

This process is exactly opposite to the one described above. A rubber dough is prepared and subjected to a partial vacuum. In this way a very porous mass was obtained, which was afterwards vulcanized with the aid of chloride of sulfur, dissolved in carbon disulfide. When the vulcanization is completed, the product is washed with ammoniacal liquor in order to neutralize the hydrochloric acid which has been formed in the course of the vulcanization.

The Schidrowitz and Goldsborough Process

This is a process for the manufacture of rubber sponges, which gives good results and is, moreover, very economical. The process differs essentially from the others that have been described heretofore in that it starts directly with the latex as it comes from the rubber tree. A method of coagulation is used, which permits the obtaining of a coagulum which is extremely porous. The vulcanizing reagent is added either directly to the latex or in the course of the coagulation. It varies according to the material that it is desired to procure and according to the method of vulcanization that is employed.

The vulcanization process can be carried out while the mass is still moist and the coagulating reagent can be of such a nature that its action is felt only when it is subjected to the heat in the auto-clave. In this case the sponge forms only while the heating process is going on. Moreover, it is to be noted that the coagulated mass does not have to be purified and that it can be produced either by heat or by the action of coagulants, such as, acetic acid or other organic acids, that are slightly soluble in the cold water or in the latex, and others which dissolve in the hot latex, such as, the acid salts, carbon sulfide, benzol, acetone, alcohol and salicyclic acid.

To obtain porous sponge various substances are used which evolve gases either when subjected to the influences of heat or when they undergo a chemical decomposition, such as the carbonates and the sulfides. These can be added either after, during or before the coagulation has taken place, according to the nature of the product that it is desired to obtain. The vulcanization can be accomplished by the addition of sulfur as such or in solution, or by using compounds of sulfur that will liberate their sulfur content through a chemical decomposition. In the vulcanization process, the heating agent used is always steam.

Properties and Uses of Sponges

Rubber sponges possess some very striking properties, which are due to their cellular structure. For example, they possess the lowest apparent density of all solid substances. This is about 0.05. In spite of their cellular structure, sponges are impermeable to water and almost impermeable to gases. This is due to the fact that each individual cell in the sponge acts as an independent body and that the diffusion through its walls is very slight, both in the case of water as well as in the case of gases. Because of their very low specific gravity, they have a very low specific volume, which makes their net cost very small in the various uses to which they are put.

The most natural and ordinary use for rubber sponges, and what is generally thought to be its only commercial use, is as a substitute for the natural sponge for cleansing purposes, but this is by no means the only usage to which rubber sponges are put. A number of these will be discussed in the following.

Life Belts and Life Rafts

It could hardly be supposed at first though that sponges could be used in the construction of life-belts and life-rafts, but it has been found that they give good service for this purpose. As has been stated above, the sponge does not absorb water when it floats upon it. Life-belts made of this material possess the advantage of being very light; they fit the contours of the body well and what is most important and what constitutes their particular advantage over the pneumatic life belts, they can be punctured or cut accidentally, without losing their effectiveness in any way. A life-raft, made from rubber sponges, has proven to be as insubmersible as anything could be. Sponges have also been used in the construction of buoys, beacons and other similar floating apparatus and have given good results in this connection.

Pneumatic Tires

The advantages of the pneumatic tire are so evident that it is entirely unnecessary to mention them here. However they possess one decided disadvantage in that they are subject to sudden deflation, due to punctures and blow-outs, which may occur at any time and which necessitates the removal of the tire and its replacement by a new one. Not taking into account the inconveniences and the troubles, incurred in making the change, there is often present the necessity of continuous

La Caoutchouc & Gutta-percha 17, 10459—10460.

operation of the vehicle, which does not permit of its stopping for a change of tires. For many years, inventors have worked on various substitutes for and modifications in tires to obviate this disadvantage.

In Germany during the war, the lack of rubber made it absolutely necessary for other means to be found which would give the necessary resiliency and elasticity of the rubber tire. The results that were obtained through the use of the numerous substitutes were invariably very poor. We are all familiar with the many special makes of tires, tires wound with cord, tire with steel plates imbedded, etc., and the various solid tires, provided with mechanical means of procuring elasticity, all of which are intended to reduce the danger of accidental deflation to a mimimum. Nevertheless, the great majority of automobilists are satisfied to ride "on air" and risk this danger. The only substitute that gives results that are in any way comparable with air inflated tires is the tire, filled with sponge rubber.

The use of various other filling materials has been proposed, but two very serious objections have always been found to their use, viz: that in traveling at high speed the tire fillings tend to heat up and decompose; and that they have a tendency to form flat places in the tire. The best way of inflating the tire is undoubtedly by means of air, and the next best arrangement is to use sponges. In this case, the vehicle really still continues to run on compressed air, only the air, instead of being contained in the tube primarily, is imprisoned in a multitude of cells, which make up the sponge.

Sponge filled tires come up to practically all the requirements of well inflated tires. They are very durable and they are made in such a manner that they reduce the fatigue of traveling to a mimimum. They are light, elastic and sufficiently resilient to absorb the shock of traveling over rough roads. In a recent test, Palmer tires, provided with sponge fillings instead of air inflation, traveled a distance of 1950 miles at 35 miles an hour without suffering the slightest deterioration.

As has been stated above, sponges owe their impermeability to water to the fact that each cell in them acts as an independent body and water cannot penetrate through the rubber walls of the cell. In a similar manner their cellular structure endows them with the property of being good insulators not only to heat but to sound as well. For these reasons, it has been proposed to use them in the construction of telephone booths and in the manufacture of clothing for aeronauts and polar explorers and travelers who penetrate into the cold regions of the earth.

Up to this point we have considered the manufacture and applications of soft sponges. There is another variety of rubber sponge, the hard sponge. This is made by allowing the vulcanization to proceed further and by increasing the percentage of sulfur used in the process. In this way an ebonite sponge is formed. These ebonite sponges have an apparent density of 0.2 to 0.605, which is about half to a sixth of the density of cork and a quarter to half the density of wood.

Although these sponges have the resistant powers of ordinary ebonite, they have retained all the characteristic properties of the soft sponge. In addition thereto, they possess the property of remaining unchanged under the influence of heat and can very readily support temperatures upwards to 130 degrees C. Consequently, they are well suited for the construction of freezing machines and thermos bottles. They are also to be recommended for the construction of storage battery boxes, as they are just as tough as ebonite but much lighter. The ebonite sponge possesses considerable mechanical strength and is also very light; consequently, it has been proposed to use it in the manufacture of the chassis of aeroplanes. Another use is in the construction of the bodies of automobiles.

Rubber Goods in Egypt

American Consul Lester Maynard at Alexandria discussed the Egyptian trade in rubber goods according to the bulletin of the Rubber Association as follows:

"Due to the greatly increased importations of automobiles into Egypt in 1920 the market for rubber tires was considerably increased, and despite the present slump in the automobile trade there is still a more or less constant but limited demand for tires. There are approximately 4,500 motor vehicles in use throughout Egypt at the present time. It is estimated that 85 per cent of the tires used are of the clincher type and the remaining 15 per cent straight edge. Imports in 1920 were worth $851,982, of which the United States furnished $195,600 worth, the United Kingdom $389,013, and France $201,731. Many of the American makes supply Egypt through London, and American tires actually predominate in the country.

"There is a fair market here for rubber boots and shoes. They are usually imported by commission merchants and supplied by them to the retailers. The usual terms for the importer are cash against documents upon the arrival of the goods. Imports in 1920 amounted to 94,708 pounds, worth $147,042, of which the United Kingdom supplied 59,004 pounds, worth $120,242; Japan, 23,427 pounds, worth $11,203; and France, 9,243 pounds, worth $8,278. Miscellaneous rubber imports were valued at $642,743 in 1920, the United Kingdom furnishing $453,518, the United States $32,292, France $66,297, Italy $41,888, and Japan $16,346. As in the case of rubber tires the receipts from the United States are much larger than the figures indicate, most of the goods being transshipped at some British port. Goods of American origin are popular in Egypt, but high exchange and the existing commercial depression make the present moment unfavorable for extending American trade in this country."

Damage to Rubber Seed

Since rubber seed ceased to be in demand for planting purposes, and especially when the large areas under rubber came into bearing the utilization of rubber seed as a source of oil and seed cake was considered by commercial firms and planters.

From a study of the article on "The Oil Content, Keeping Qualities and Commercial Possibilities of Para Rubber Seed" in the *Agricultural Bulletin* of the Federated Malay States, No. 5, Vol. VI, dated February, 1918, it would appear that the manufacture of rubber seed oil with its residual product should be successful.

A few months ago an inquiry was received by the Department of Agriculture with regard to alleged damage caused by insects to a considerable quantity of stored rubber seed.

The Acting Government Entomologist, at that time, reported, after having visited the oil mills, that there were several species of insects found in the seeds but he was unable to say how much injury, if any, resulted directly from them, how much was due to fungi, or what should be ascribed to damaged seed prior to storing, and drew up a scheme of experiments to ascertain the best means of storing the seed to prevent ravages from insect and fungoid attacks.

One of the writers soon after his arrival in Malaya, took the opportunity of visiting the mills and came to the conclusion that, though a very small percentage of seeds contained a beetle, *Tribolium ferrugineum, Fabr.*,—an almost universal past of stored products—and species of scavenger beetles, the problem was mycological not entomological since the majority of seeds showed signs of the presence of a fungus.

Experiments were conducted in the entomological laboratory to see if the beetles could enter sound seed and it was found that they were unable to do so.

A large number of apparently sound seeds was examined and no grub or beetle was found inside them, but, on the other hand, a few damaged seeds contained both grubs and beetles.

From the experiments conducted and counts made it seems necessary that the kernel has to be exposed before the beetle can enter the seed.

It might be mentioned that the seed is collected by different estates and sent direct to the mills where it is stored in sacks in open sheds. No provision for drying the seed before storing is made and it is stated that, "The sun-dried seeds packed in bags maintained a perfect state of preservation".

If some method was adopted to arrest the growth of the fungus, the writers are convinced that no complaints of insect damage would be reported.

Agricultural Bulletin of Federated Malay States.

The Relative Thermal Conductivity of Some Rubber Compounds

By Dr. A. A. Sommerville

There has been considerable comment relative to the heating action of black vs. white tires in service. This increase in temperature of a tire in service may presumably be due to two principal thermal factors; one of these is the amount of energy dissipated in the form of heat due to internal friction or flexing of the tire; the other factor is the rate at which this heat may get out of the tire, or in other words, the thermal conductivity.

I have no figures on the amount of heat generated in a tire but it has occurred to me that it would be a rather simple laboratory experiment to determine the relative thermal conductivity of some rubber compounds.

The samples were made by Mr. W. W. Sanders of the Empire Tire & Rubber Company. We had the idea of determining the effect of normal, under and over-cure, high and low sulfur, with and without accelerator, plus equivalent volumes of a considerable number of compounding materials.

Making the Thermal Tests

The thermal tests were made in the Physics Department at Columbia University after laying plans and consulting with one of the best authorities on the subject at Cornell University. The samples were molded sheets about 7 x 7 inches x 1/10 of an inch in thickness. The thermal tests were made by stacking these sheets one on top of another, inserting thermo-junctions of fine wire between the sheets, placing this so-arranged stack of sheets on top of a jacketed water boiler, then putting a pan of cracked ice on top of the stack of sheets representing different rubber compounds.

If the opposite faces of a stack of about twenty such sheets are kept at temperatures of 0 deg. and 100 deg. Centigrade (32 deg. and 212 deg. Fahrenheit) respectively, after three or four hours the thermal conditions throughout that stack of sheets will become constant.

The thermo-junctions will then give a measurement of the temperature of each side of every sheet in the stack and since the thermo-junctions are not near the outer edges of the sheets, the heat lost at the edges does not need be considered, and the temperature gradient or the difference in temperatures between the two faces of a sheet is a measure of its relative thermal conductivity as compared with similar data for other sheets in the stack at that same time.

In other words, under the above conditions if the difference in temperatures between the two faces of sheet A is the same as that of sheet B, then those two sheets have the same thermal conductivity; but if the difference in temperature between the faces of sheet C is double that of A or B, then the thermal conductivity of C is only half that of A or B.

Temperature readings were not taken over the entire range from 32 deg. to 212 deg. Fahrenheit but only on those sheets within limits of 75 deg. to 175 deg. Fahrenheit.

As a matter of fact, repeated tests on samples do not always give results agreeing as closely as one would desire—the percentage of error is undoubtedly very high—thermal conductivities are not easy to determine accurately, nevertheless an approximate idea of the relative thermal conductivity of some rubber compounds has been gained.

The Compounds Used

The following compounds were used:

	(1)	(2)	(3)	(4)	.....(21)
Ceylon	100	100	100	100	100
Sulfur	10	10	3	10	10
Accelerator	2	...	...	2	2
Zinc Ox.	...	...	...	150	and other materials

In subsequent compounds up to No. 21, zinc oxide was replaced by equivalent volumes of various other materials. One sample was also made of fabric frictioned and skim-coated with a so-called pure gum stock.

Apparently the amount of cure has little if any effect on the thermal conductivity; one and one-half hours at 50 lbs. steam pressure was considered normal cure.

Of course many of the materials used in the test samples would never be used in such amounts in actual commercial practice and in some cases, too, the cures were far from being correct as in the case of the leads.

No real difference could be determined in the thermal conductivities of the so-called pure gum stocks, that is samples 1, 2 and 3. For ease of comparison their conductivity has been taken as unity and relative values as determined are shown for other compounds containing materials equivalent in volume to that of zinc oxide as shown in compound No. 4.

	Relative Thermal Conductivity
Pure Gum Compounds 1, 2 & 3	1.00
Glue	.87
Asbestine	.91
Lampblack	1.02
Frictioned Fabric	1.07
Carbon Black	1.14
Crimson Antimony	1.15
Whiting	1.23
Lithopone	1.33
Magnesia Carbonate	1.45
Soapstone	1.45
Sublimed Lead	1.60
Zinc Oxide	1.65
Blue Ridge Clay	1.67
Dixie Clay	1.68
Litharge	1.78
Iron Oxide	1.86
Fossil Flour	1.90
Barytes	2.28
Barium Dust	2.65 (?)

In all fairness it should be said that this last figure may be considerably in error but it is an average of several tests taken without prejudice and undoubtedly represents the general value for the material in question.

Address, delivered at meeting of the Rubber Section American Chemical Society, Rochester, N. Y., April 28-29 Published by courtesy of the American Chemical Society.

March Exports from Brazil and Peru

[Consul George H. Pickerell, Para, Apr. 8, 1921.]

Crude rubber exports from Para, Manaos, and Itacoatiara, Brazil, and Iquitos, Peru, declined considerably during the month of March. The total shipments during March, 1921, amounted to 2,802,506 pounds, as compared with 6,912,626 pounds for the corresponding month of 1920, a decrease of 59.4 per cent. The United States received 2,137,119 pounds and Europe 665,387 pounds during March of the present year. The following table shows the different grades of rubber exported from Para, Manaos, Itacoatiara, Brazil, and Iquitos, Peru, to the United States and Europe during March, 1921:

Grades	From Para, Brazil, to—		From Manaos, Brazil, to—		From Itacoatiara, Brazil to Europe.	From Iquitos, Peru, to Europe.
	United States.	Europe.	United States.	Europe.		
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Fine	399,077	253,964	872,676	171,985	4,938	9,591
Medium	69,725	42,547	161,601	34,088	353	.....
Coarse	69,836	30,225	214,825	22,646	1,433	2,574
Caucho	111,097	79,065	238,282	11,184	.....	794
Total	649,735	405,801	1,487,384	239,903	6,724	12,959

NEWS OF THE INDUSTRY

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Higher Tariff on Rubber Goods

Reports from Washington to the Effect that There Will Be an Increase in Duties on Manufactured Rubber Goods—Manufacturers Fear Foreign Retaliation

According to a Washington dispatch received in Akron, May 19 the duties on manufactured rubber will be considerably increased by the new republican tariff bill, it was learned from members of congress familiar with the provisions of schedule N, levying import duties on the products of foreign competitors of Akron's principal industry.

Representative John Q. Tilson, Connecticut, is chairman of the sub-committee which has the framing of the rubber schedule. Following the rule laid down by the House Ways and Means Committee, he was unable to give out definite figures on rates, but admitted that the new tariff bill will restore substantially the same rates on manufactured rubber found in the Payne-Aldrich Tariff Act of 1909.

Inquiry among other members of the house confirmed Chairman Tilson's statement.

The rates under the present tariff law, the Underwood-Simmons act of 1913, are at a level of only 10 per cent ad valorem on manufactured rubber goods, listed in paragraph 368 of the law as "manufactures of india rubber and gutta percha." The rates under the Payne-Aldrich act of 1909 were 35 per cent ad valorem on the same articles. The new bill now being framed by the house ways and means committee will restore the 35 per cent ad valorem duty of 1909.

Chairman Tilson declared that schedule N is now complete and that his sub-committee will report that section of the bill some time in the near future to the full committee. The other members of the sub-committee are Representative Charles B. Timberlake, Colorado, and Representative Luther W. Mott, New York.

"The manufacturers of rubber made no appearance before our sub-committee," Chairman Tilson said in discussing schedule N, in an interview with *The Akron Times* corespondent.

"In case where no protection was asked by representatives of the various industries, it has been the usual rule of the sub-committees which are drafting the various schedules to restore the duties of the Payne-Aldrich act."

The failure of automobile tire manufacturers to appear at the extensive hearings held by the house committee on the tariff bill last February was interpreted in Washington as an indication that the industry does not favor high duties.

Many automobile manufacturers, as well as tire manufacturers have opposed a high tariff on the ground that most of the automobiles and tires manufactured for export are made in this country. The American manufacturers of cars and tires have not met with foreign competition and feel no need for a prohibitive tariff. On the other hand, if a tariff wall is erected barring other foreign manufactured goods, they fear that the countries affected will retaliate by putting high tariffs on American made goods.

In the course of the house hearings, the tariff commission laid before the committee data calling attention to the fact that Akron is the greatest rubber manufacturing center in the world. The commission pointed out that there was no necessity for imposing high duties on rubber manufacturers. Its report to the house committee declared:

"The United States leads the world in rubber manufactures. The extent of the demand for rubber tires in this country is indicated by the fact that 85 to 90 per cent of the world's automobiles are used in the United States.

"In 1914 there were 301 manufacturers of rubber goods, with 50,220 employes, wages of $31,279,000, a capital of $199,183,000, materials costing $126,112,000 and the value of the products was $223,611,000, Ohio, New Jersey and Massachusetts leading."

The tariff commission reported to the committee that in 1918 the automobile tires manufactured for export, principally at Akron, were valued at $13,977,671, the exported tires going chiefly to South America, Canada and Oceania. The imports of manufactured rubber articles in 1914 were $947,404, coming principally from England and Germany. In 1918 the imports had shrunk to only $282,572.

Crude rubber imported into this country in huge quantities for manufacture at Akron will remain on the free list in the new tariff bill, according to members of house ways and means committee.

The committee is now meeting daily on the tariff bill. Hearings have been completed and an effort is being made to complete the schedules of the bill so that it can be reported to the house between June 5 and June 15.

Price Reductions Continue

(Special Akron Correspondence)

Other rubber companies are falling into line with B. F. Goodrich Co. which first announced a 20 per cent reduction in the price of automobile tires.

Practically every other concern in the Akron manufacturing district has made price reductions. Some met the Goodrich cut, while others did not scale their prices down to so low a level.

Since the original B. F. Goodrich reduction on May 2 announcements of cuts have been made on all sides. These have not been confined to the Akron territory alone but are representative of the entire country. During the last three weeks over seventy-five tire manufacturing concerns have reduced their prices. Limitations of space make it impossible to mention all of them.

The Goodyear Tire & Rubber Co. reduced prices from 11½ to 15.8 per cent on casings and as high as 20 per cent on tubes. Price reductions on cord tires will average 12 per cent, fabric tires will be reduced an average of 15 per cent while tubes will average 20 per cent.

The Miller Rubber Co. also has announced reductions of 20 per cent while the Firestone Tire & Rubber Co. has announced slightly lower reductions.

Prices of cord tires are cut an average of 12½ per cent. under the new schedules and fabric tire prices are cut 17½ per cent. Tube prices are reduced 20 per cent.

Under the new prices, a 30x3 fabric tire, now $17.25, will cost $14, and a 30 x3½ fabric tire will be reduced from $20 to $16.50, while a 30x3½ cord tire will be reduced from $32 to $24.75.

The Goodrich company is sending out the following statement in explanation of their action in lowering prices:

"In most parts of the country the active tire buying season opens with the first of May, hence it is the proper time to make a serious effort to establish a new schedule of tire prices.

"While a reduction of prices during the 1921 season might not have been unexpected by the motoring public, it is safe to say that it came much sooner and was a greater reduction than had been anticipated.

"The only question is whether or not it is too low. We feel that our readjustment of prices is radical and at one move it puts tire prices at rock bottom.

"Conditions in the automobile industry are much better and the outlook much brighter and of course this is reflected in the tire industry. Fair wages, honest products, right prices and a square deal all around are what will give producer, distributor and public real confidence. Recognizing this, we put our prices at the point we have announced."

Goodyear Reorganization Completed

Refinancing and Reorganization Plans of Akron Company Approved—New Officers and Directors Elected—Statement by Retiring President F. A. Seiberling

The completion of the refinancing and reorganization plans of the Goodyear Tire & Rubber Co. is expected to have a steadying effect upon the rubber industry in the Akron manufacturing district. Throughout the long period when Goodyear plans were held in abeyance, eyes of the Akron business world were turned toward the big plant in East Akron. The confidence shown in Goodyear by bankers

President E. G. Wilmer

and security houses has led to the belief that the rubber industry has passed the depression peak and that a return to normal conditions is within sight.

Goodyear stockholders holding their long deferred meeting on May 10, took the steps necessary to complete details of the $85,000,000 refinancing and reorganization program. Over 90 per cent of the common and 82 per cent of the preferred was voted in favor of the execution of a first mortgage on the company's properties to secure the issuance of $30,000,000 twenty-year 8 per cent first mortgage gold bonds and $30,000,000 ten-year 8 per cent gold debentures.

The stockholders also approved reorganization of the company with common stock of no par value.

President F. A. Seiberling was given an ovation at the meeting, and unanimously elected chairman. W. E. Palmer was elected secretary.

It was announced there were 660,796 shares outstanding of preferred stock and 610,474 shares outstanding of common stock. There were 533,473 shares of preferred stock and 552,932¼ shares of common stock represented by proxy that were voted unanimously in favor of the reorganization plans.

The next steps in the refinancing and reorganization program were taken May 12,. The $30,000,000 first mortgage on all Goodyear properties, executed in favor of the Union Trust Co. of Cleveland, was filed in the recorder's office at Akron.

Meanwhile Goodyear attorneys were in Columbus filing new articles of incorporation with the Ohio secretary of state.

The articles provide for $140,010,000 of preferred capital stock and 1,500,000 shares of non par common stock. In all, there are 2,910,000 shares of both classes of stock. The fee paid the state was $290,010, the largest ever received by Ohio from a corporation for this purpose.

The reorganization scheme also provides for $30,000,000, eight per cent, twenty year first mortgage bonds and $30,000,000, eight per cent ten year debentures. The preferred stock is divided into three classes: $40,000,000, eight per cent prior preferred, $100,000,000 seven per cent ordinary preferred and $10,000,000 six per cent management preferred.

On Friday, May 13, the directors chosen by the new financial interests met in the offices of Dillon-Read & Co. in New York City and elected officers. It was at this meeting that action was taken which marked the retirement of the Seiberlings from the control of Goodyear.

E. G. Wilmer of Milwaukee, was elected president succeeding F. A. Seiberling.

G. M. Stadelman and P. W. Litchfield were re-elected vice presidents. The vice presidency held by C. W. Seiberling was dropped from the list of officers.

H. H. Springford was named treasurer and Charles A. Stillman, treasurer. This action automatically dropped W. E. Palmer who retired as treasurer of the Goodyear when bankers put in their own representative some time ago and now retires as secretary which position he had held until the reorganization.

Directors named are: J. P. Cotton and Grayson M. P. Murphy, New York City; P. W. Litchfield and G. M. Stadelman, Akron; Robert C. Schaffner and Ralph Van Vechten, Chicago; A. A. Schlesinger and E. G. Wilmer, Milwaukee; and J. R. Nutt, Cleveland.

A rapid come-back for the Goodyear Tire and Rubber Co. is predicted by Edward G. Wilmer of Milwaukee who on May 16th took charge of the big tire factory in Akron. He expressed himself as satisfied with the quality of determination displayed by the Goodyear Tire & Rubber company's organization during the recent crisis through which the company passed.

"It is too early to outline a policy for the company," Mr. Wilmer said in his first official statement. "Personally I would prefer to remain in the background, giving full credit to older members of the organization who have helped make Goodyear one of the country's leading industries. I speak of P. W. Litchfield and George Stadelman."

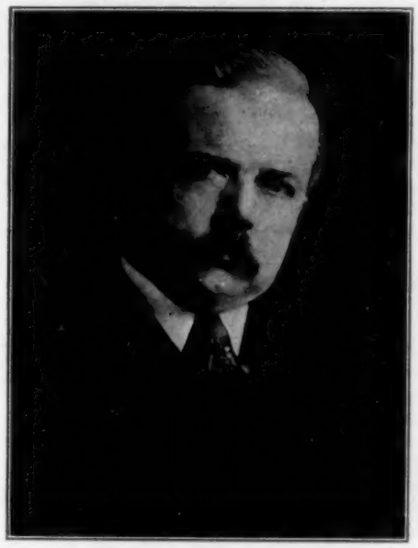
President Wilmer's business interests for the present will center principally on straightening out the complete reorganization.

"The Goodyear company in California is not involved in the local reorganization," he stated. "There is no need for refinancing of the California plant.

"The Canadian Goodyear Co., however, will undergo a reorganization similar to that being conducted here."

Mr. Wilmer seemed exceptionally interested in the organization, with which he is surrounded.

"Goodyear officials showed unusual courage throughout the depression," he declared. "They met all difficulties and



Retiring President F. A. Seiberling

showed quality of the highest type. We are all ready for the come-back."

Mr. Wilmer's selection, the banking interests controlling the company, comes as a result of his great success as vice-president of three other great American concerns, with which he has been associated in an executive capacity during the past twelve years.

The group of companies include the Steel & Tube Co., of America, located in Chicago, the Newport Chemical Co., and the Milwaukee Coke & Gas Co., both of Milwaukee.

The Steel & Tube Co. is engaged in manufacturing finished steel. The concern not only has its own mines, but handles completely, the material from the raw stage to the finished product.

The Newport Chemical Co. specializes in dye stuffs, having an extensive trade.

The Milwaukee Coke and Gas Co, supplies the home city with gas and industries with coke.

Mr. Wilmer entered George Washington University at Washington, D. C., as a law student, but has never followed his profession. Early recognized as an executive genius in industry, he became associated with the above named companies soon after completing his collegiate training.

He was interested, however, in correcting one statement published at the time

the announcement was made he had been selected president of Goodyear to succeed F. A. Seiberling.

"I am not a brother-in-law of Clarence Dillon of the Dillon-Reade Co.," he said. "I wish you would make that correction."

A native of Milwaukee, Mr. Wilmer in more recent years has made his home where his business interests have called him. He will make his residence in Akron.

As soon as possible, the new Goodyear president will outline more definitely, the company's policy and perhaps discuss prospects for the future.

Frank A. Seiberling, who retired as president of the Goodyear Tire & Rubber Co. when the recent reorganization was effected, plans to engage in some other business enterprise within a short time, he intimated in a statement given to the press on the day he stepped out of the executive office of the big East Akron plant.

Rumor has it that he will take charge of the Ideal Tire Company at Bedford, Another, and its repeaters build it up with elaborate argument, is that he will direct the destinies of the Star Rubber Co., one of the smaller tire concerns in Akron. Mr. Seiberling's statement follows:

"The reorganization plan for the Goodyear Tire & Rubber Co., was completed yesterday in New York, at the office of Dillon, Reade & Co., and through the resignation of five of the seven directors of the company and the substitution of others, the control of the business passes into the hands of the bankers, as provided in the reorganization plan.

"My brother and myself sever our official relations with the company. Both of us continue our interest as its largest stockholders.

"For twenty-two years we have labored together, with a loyal staff of as able men as can be found in any business organization in this country. What has been achieved this community knows.

"The nation-wide slump in business last fall brought the business to the verge of disaster. Since that hour I have had but one purpose—to save this business from a receivership and this community from the results of such a calamity. That was accomplished yesterday and the new management inherit a business soundly financed and with the finest working organization of any company in the rubber industry in the world.

"My successor is Mr. Wilmer of Milwaukee, a young man of fine legal training and broad experience in operating business, and with the return of the world to normal business there is no reason why Goodyear cannot move forward to a higher plane than it has yet achieved. The bankers in control made me an exceedingly generous offer to continue with the business, which, after careful consideration, I felt justified in declining.

"You ask me what I am going to do next. I do not know. Since I left school forty-four years ago I have labored hard, enjoying my work all the way along, through all its difficulties, up to within the period of the last six months. In truth, I have been tired during that period. The burden is now all off my shoulders. Except for a few days, I have had no vacation for over two years. I am going to clear up some of my personal matters next week, then go away for a month's rest, and when I come back I shall go to work—at something."

The retirement of the Seiberlings led an editorial writer of the Cleveland Plain Dealer to comment:

"The passing of the Seiberlings from control of the Goodyear Tire & Rubber Co., is an event which the people of Akron, who know the Seiberlings best but cannot fully understand the force of circumstances which have led to their retirement, will sincerely regret. The Seiberling name has been one to conjure with in the period when the Rubber City was forging toward the front of American manufacturing centers. To them Akron owes much.

P. W. Litchfield

"The Seiberling brothers were industrial pioneers who, starting modestly, kept pace with a rapidly expanding line of manufacture, saw with a broad vision, built for the future and worked ceaselessly for Akron as well as Goodyear. It never was a part of Seiberilng policy to exploit or to build on another's misfortune.

"They were their employes' best friends. They knew the value of playgrounds and athletic fields, of auditorium, rest rooms and cafeterias. They knew the importance of proper housing and adequate schools and scientific training for the individuals in their vast industrial army. Dividends were not the sole interest in the lives of these rubber magnates; human relations were deemed essential to community and business growth.

"Whatever the future may hold for F. A. and C. W. Seiberling, therefore, the impression they have made on the growth and civic character of Akron will be lasting. The evidence of their interest in workingmen and their families will continue, perhaps long after their connection with Goodyear is forgotten in financial circles."

Smaller Companies in Litigation

(Special Akron Correspondence)

Small rubber companies, especially the ones that sprang into existence with the recent boom, are having a hard time with finances now. Hardly a week passes but some receiver or some board of directors does not go into court with suits seeking to compel payment of stock subscriptions.

Among companies involved in such actions here now are the Interlocking Tire, Amazon Rubber and Supreme Cord Tire & Rubber Co.

The Amazon has filed suit against Alexander Adamson for $10,000 claimed due for 100 shares for which he subscribed Feb. 24, 1920. Other Amazon suits are against Alois Witz for $1,500 and John H. Shuman for $1000.

Scott D. Kenfield, receiver for the Supreme Company, seeks to collect $200,000 in unpaid stock subscriptions.

The men and the amounts they are alleged to have subscribed are: B. L. Eaton, Greenville, Pa., $100,000; John L. Swartz, 448 E. South-st., $90,000; Lillian E. Kaufman, executrix of the estate of W. J. Kaufman, 444 E. Exchange-st., $9600; Al Kaufmann, 205 W. Market-st., $100, and John Austgen, 151 Russel-av., $100.

Fort Wayne in Bankruptcy

The Fort Wayne Tire & Rubber Mfg. Co. at Fort Wayne, Ind., was recently adjudicated a bankrupt at the meeting of creditors the latter part of April. David S. Vesey, of Fort Wayne, Ind., was elected trustee in bankruptcy.

The company owns a site of about two and one-half acres adjacent to both steam and traction lines. The buildings and equipment consist of a main factory building of three stories and four one story out buildings. The machinery is of the latest type, and facilities are for manufacturing 300 tires and tubes each per day.

The failure of the company was caused by the general decline in market conditions which left the company facing large contracts for materials at prices which they could not absorb. The trustee in bankruptcy is completing the manufacture of materials in process, taking an inventory and appraisement and intends shortly to offer the property for sale.

New Firestone Truck Tire

Truck tire experts of the Firestone Tire & Rubber Co. announce the perfecting of a new type of truck tire. This is known as the Firestone Giant Cushion. A development of the small cushion tire and the giant single-grooved solid, it is claimed for the Giant Cushion that it is universal in its adaptation to trucks.

From general opinion on the subject and from different cushion tires on the market, the impression seems to have gained ground that cushion tires could be used only on small trucks. Firestone experts say long tests have proved that the new Giant Cushion completely overthrows this theory, for this new tire may be placed on all sizes of trucks.

News of the Mid-West Association

Members of Organization Hold Interesting Meeting in Chicago, May 10—Resolution Adopted Regarding Returned Merchandise—An Opinion Regarding Credits

Extraordinary activity marked the proceedings of the Mid-West Rubber Manufacturers' Association meetings at Chicago, Tuesday, May 10. While the board of directors was in session in the director's room at the Chicago Athletic Association, the Co-operative Committee held an important session in the offices of the secretary of the association in the McCormick building. A definite plan of action was decided upon by the committee and definite recommendations were made to the board of directors for action.

The principal speaker at the luncheon was Edward E. Gore, of Barrow, Wade & Guthrie, certified public accountants, Chicago, and chairman of the Federal Taxation Committee, of the Chicago Association of Commerce. In his clearly analyzed presentation of this all important subject Mr. Gore deplored the existing situation with respect to the correction of unjust taxation. Mr. Gore said there should be a court of appeals sitting in various centers of the country where speedy correction could be made. He also argued that the time limit for making returns should be four months instead of two and one-half months. He discussed the methods employed to arrive at the capital stock from the book value or earnings according to whichever appeared the most convenient and stated that capital stock should be put on book value only. He did not enter into a discussion of a sales tax but expressed his belief that the entire tax should be on incomes, with some modifications.

In the director's meeting two applications for membership were considered—that of the Ohmlae Paint and Refining Co., and of the Great Western Tire & Rubber Co., Centerville, Iowa. Both were elected to membership. The program of legislation asked by The American Legion in the interest of the disabled soldiers, sailors and marines of America was indorsed.

To harmonize with a practice which is already in effect with many manufacturers the following resolution was adopted: "The board of directors recommend to the manufacturers of this association that a minimum charge of five per cent be imposed on returned merchandise for credit or exchange. The freight in any case, either on the return of merchandise for credit or exchange, or on the shipment of new goods, to be paid by the party returning such merchandise."

Following the regular meeting twenty-two manufacturers from plants located in Wisconsin, Minnesota, Iowa, Nebraska, Missouri, Illinois, Indiana, Michigan, Ohio and New York met in executive session and discussed business conditions.

An Opinion Regarding Credits

Among the many interesting communications received recently by the Mid-West Rubber Manufacturers' Association was the following letter, written by a veteran in the tire industry, who desires his name to be withheld. In commenting upon the existing situation with respect to the granting of credits, the writer says:

"It certainly would be a pleasure to do business were we able to obtain cash on all orders, shipping goods either C.O.D. or SD/BL but we would have to have in this case enormous storage space in

SECRETARY J. P. MATTHEWS

order to take care of the natural output of the factory during the off season and when goods are not in actual demand, yet it is necessary at this time of the year to keep the factory going in order to handle production or costs in the most economical way. And to carry these large surplus stocks adds greatly to the expense not only of the space required and the investments in the necessary buildings but also the insurance. In case of a cash transaction, the dealers absolutely would not purchase goods until required and they would then all want them at once which would mean curtailment of volume of business.

"Under the present credit arrangement which is of course very objectionable, it allows the factory to distribute their goods among the trade so they all have goods ready for the season when it does start. The ideal manufacturing condition is to be able to keep the factory on an even keel the entire year and yet be able to absorb the production.

"It would require a greater amount of working capital for a factory to dispose of their goods on an absolute cash basis at certain seasons of the year than it does under the present method, for the reason that the dealers would not purchase, yet it would be necessary, in order to handle this volume to keep on manufacturing and storing up the goods which would be an entire investment in the stock on hand. Whereby when terms are extended, trade acceptances are signed on the receipt of the bill-of-lading showing shipment which means that the manufacturer is able to discount these trade acceptances and replenish working capital which could not be done were these goods kept in stock on hand awaiting sight draft shipment when the season started.

"The best way to eliminate some of the disagreeable features of credit business is for the manufacturers to see that they get better accounts and for the manufacturers' association as a whole to endeavor to develop a better class of dealers in the tire business. In the past, it has simply been a case of selling anyone that you could possibly sell and take a chance on whether this account developed into a good satisfactory account or in not taking into consideration whether the party purchasing these goods had any business ability or not. If we can dictate or develop better merchandising through the tire dealers and a better class of dealers, a great many of the disagreeable features of this credit business will be eliminated.

"There is no question but what there are many improvements that can be obtained through association work, provided the members work in accord and are sincere in all their agreements. There are also a lot of idealistic ideas in every line of business which would be fine if they could be accomplished but when these things are absolutely impossible to accomplish which seems to the writer is the case on credit proposition as exists at present with the number of different factories and the competition that exists, it seems like a waste of good valuable time to endeavor to put forth such a proposition.

"There is one thing in the writer's opinion that the rubber manufacturers must learn before there can be a great deal of success and that is confidence in each other. The greatest enemy to the rubber business today is the attitude of the manufacturers toward each other and the inability to arrive at any agreeable solution."

Hood Increases Production

The Hood Rubber Company at the plant at Watertown, Mass., on May 9 began working three full shifts for the first time since last fall. All of the former experienced tire makers were reemployed and new men were added, and it is planned to continue hiring additional help, until the maximum production of the Hood tire plants is reached.

Boston Rubber Shoe Shuts Down

Notices were posted May 14 in the shops of the Boston Rubber Shoe Company in Malden and Melrose, Mass., announcing a shutdown from May 27 to July 5. The mild winter, with consequent falling off in demand for rubber footwear, is given by the management as the reason for closing. The factories employ 3,200.

News of the Rubber Association

Various Items of Interest to the Members of the Industry Recently Mentioned in the Latest Bulletin of the Organization

Claims Against U. S. Railroad Administration

Association Traffic Bulletin No. 28, February 21, 1921, contained the advice that claims for over-charges occurring during the period in which the carriers were under Federal control, must be filed with the Interstate Commerce Commssion not later than February 28, 1921.

The effect of the ruling of the Railroad Administration was to bar a great many claims because the period from the time of the issuance of the Railroad Administration's notice to February 28, was too short to enable shippers to prepare their claims.

The Director General of Railroads has now issued a circular stating that claims for overcharges occurring during the period of Federal control that had not been filed with the Interstate Commerce Commission prior to March 1, 1921, may be filed with the carrier exacting the overcharge not later than September 1, 1921. As to claims that were filed with the carriers and were not in turn filed by them with the commission prior to February 28th, the carriers failing to take this action are now directed to dispose of them by investigation and settlement under the rules prescribed by the Director General of Railroads.

This action brings forth a large number of claims that were considered invalid due to the limitations contained in the Transportation Act of 1920.

If any of our members have claims for overcharges occurring during the period of Federal control that have not been disposed of, it is suggested that they be filed immediately with the carrier exacting the overcharge.

Commodity Rates on Rubber Goods from East to Pacific Coast

The Traffic Committee of the association filed an application with the Trans-Continental Standing Rate Committee asking for the revision of commodity rates on pneumatic and solid tires, boots and shoes and mechanical goods, from manufacturing points located east of the Mississippi river to Pacific Coast ports, to meet those applying via the Panama Canal, and a hearing on the application was granted the Traffic Committee by the Standing Rate Committee in Chicago on April 27th.

The Traffic Committee has been informed that the carriers desire to revise the westbound rates in such a manner that will enable them to regain a fair share of the traffic that his gone to the steamship lines.

Classification of Tires in Mississippi State Classification

Mississippi State Classification No. 3, which applies on traffic having origin and destination in the State of Misissippi, provides for first class rates on pneumatic and solid tires only when shipped in boxes or crates.

The Traffic Committee applied to the Mississippi Railroad Commission, having jurisdiction over this publication, asking that it be revised to provide the same ratings and packing specifications now in effect in the Southern Freight Classification, applicable on interstate traffic. A hearing on the application was held in Jackson, Miss., on May 3rd, at which the Traffic Committee was represented by a local representative of one of the tire manufacturers.

Advice has since been received that the Mississippi Railroad Commission has granted the application and has authorized the publication of the same packing specifications and ratings on pneumatic and solid tires as are now contained in the Southern Classification. This will enable tire manufacturers to follow the same method of packing shipments from branches in Mississippi for movement within that state as is used on shipments on interstate traffic in the South.

Report of Motorcycle and Bicycle Production

The following information concerning the production and total value of motorcycles and bicycles manufactured in the United States during 1919 compared with 1914, as compiled by the United States Bureau of Census, and appeared in the Federal Trade Information Service of May 10.

It is believed that upon compilation of the final report the figures for 1919 will be slightly increased at that time:

A preliminary statement of the 1919 census of manufacturers with reference to the motorcycle and bicycle industry, has been issued by the Bureau of Census.

Reports were received from 51 establishments engaged in the industry during 1919, with a total value of products of $53,105,995. At the census of 1914 there were 78 establishments with products valued at $22,234,262. Of special interest is the increase in the production of bicycles, the number reported in 1919 being 470,675, as compared with 299,029 in 1914, an increase of over 57 per cent.

In 1919, 9 establishments were located in Ohio, 8 in Massachusetts, 7 each in Illinois and New York, 5 each in Indiana and Wisconsin, 4 in Pennsylvania, 3 in Connecticut, 2 in Michigan, and 1 in Washington.

The statistics for 1919 and 1914 are summarized in the following statement. These figures are preliminary and subject to such change and correction as may be necessary from a further examination of the original reports.

COMPARATIVE SUMMARY OF STATISTICS FOR THE MOTORCYCLE AND BICYCLE INDUSTRY, 1919 AND 1914

	1919	1914
Number of establishments	51	78
Value of products*	$53,105,995	$22,234,262
Motorcycles		
Number	59,214	62,154
Value	16,176,055	12,161,775
Bicycles		
Number	470,675	299,029
Value	12,277,341	3,757,318
Tricycles, value	625,522	
Motorcycle parts, includ. delivery and side car attach.	10,646,480	6,315,169
Bicycle and tricycle parts	4,814,668	
All other prod. incl. repair work	8,565,929	

* In addition, in 1919, motorcycles and bicycles, including parts, to the value of $2,205,743 were produced by establishments engaged primarily in the manufacture of other products—in 1914, to the value of $4,647,798 by establishments of a similar character.

Goodyear Sales Increasing

Goodyear Tire & Rubber Co. sales for April will run more than 125 per cent over March sales. This is 50 per cent higher than was expected earlier in the month.

It is announced that the sales of rubber heels for the past month have been the largest in the history of the company in spite of the fact that the shoe business generally is still below normal.

Ford has informed Goodyear that production for the first three months amounted to 127,000 cars and that during April almost 90,000 automobiles and trucks will be produced.

The smaller automobile factories are rapidly getting back into swing according to tire specifications received by Goodyear.

Although figures are not yet available for the present month it is believed that while Goodyear thus far has led in recuperation from the business depression, other companies soon will show similar increases in sales and production.

To Discuss Mill Hazards

The committee on manufacturing risks and special hazards of the National Fire Protection Association, of which Benjamin Richards, of the Western Factory Insurance Association, Chicago, is chairman, has prepared a special report for the annual meeting of the association in San Francisco in June on spreading and mixing hazards in rubber mills and like industries.

Specifications are included in the report indicating the fundamental features of the housing of the processes, guarding the hazards and protecting the property and life. There is also a sketch indicating the application of the principles and safeguards outlined in the specifications. This sketch is not supposed to be the working plan for a spreading and churning building, as obviously a design must be adopted in each specific case to meet the local conditions. Although the plan offered might be actually used for a very small unit, it is made primarily to show clearly all the features, which are thought necessary to safeguard these hazards without interfering with the production methods ordinarily found in use at this time.

Personals of the Trade

Preston Resigns from Goodyear—Friswell in Business for Himself—Schrader Promotes Howell—Charles A. Hunter Passes Away—Hurley Heads McGraw Sales—Chillicothe Officers Elected

Preston Resigns from Goodyear

(Special Akron Correspondence)

R. A. D. Preston, aeronautical engineering expert, has resigned his position with the Goodyear Tire & Rubber Co. to become associated with Dillon, Reade & Co. of New York City.

Preston was one of the pioneers in balloon construction in America and superintended the building of the first large kite and free balloons and dirigibles at Goodyear in 1911.

Preston served as aide to Ralph Upson, Goodyear aeronaut, when the Goodyear free balloon flown by them, won the James Gordon Bennett international balloon race trophy at Paris in 1913.

They were the first Americans to win the trophy, their victory bringing the international races to America last year. Preston has also figured in designing new aircraft, and during the war trained aviators at the Goodyear Wingfoot field which was taken over by the government as an aviation training field.

Friswell in Business for Himself

Announcement has been made to the effect that Arthur E. Friswell has severed his connection with the New Jersey Car Spring & Rubber Co. and is at present acting as a rubber factory consultant, specializing in tires and mechanical goods, with offices in Jersey City, N. J.

Mr. Friswell has been identified with the rubber industry for a number of years. Prior to his connection with the New Jersey Car Springs & Rubber Co. he was for eight years with the Revere Rubber Co., Chelsea, Mass. He also spent seven years with the Mechanical Fabric Co., Providence, R. I., and was also at one time assistant-superintendent of the Hartford Rubber Works, Hartford, Conn. In addition to this he has also spent several years in England.

Hearsch Joins Samson Forces

F. H. Hearsch, who recently resigned from the position of Western district manager of the Kelly-Springfield Tire Company, has been appointed general sales manager of the Samson Tire Corporation of Los Angeles, Cal. The many friends of Mr. Hearsch throughout the West, and particularly those interested in the tire business on the Coast, will be pleased to learn of his appointment.

Simpson Sails for the Orient

Elliot H. Simpson of the staff of M. Rothschild left recenty for Vancouver, whence he will sail on the Empress of Russia for the Orient. He will visit the principal rubber centers in that part of the world and expects to occupy several months in a thorough investigation of the situation. Singapore will be one of his chief objective points. Returning by way of the Suez Canal Mr. Simpson will visit the chief rubber markets of Europe, sailing eventually from London. He expects to be abroad for about eighteen months. This is said to be the first time in the history of the trade that a representative of a New York rubber broker has been sent on a trip around the world.

Schrader Promotes Howell

Stephen A. Howell, formerly in charge of the Chicago branch of A. Schrader's Son, Inc., was recently promoted to the position of manager of the firm's Toronto branch, succeeding Harold R. Cole, who

STEPHEN A. HOWELL

is now at the main office of the company at Brooklyn, N. Y. Mr. Howell joined the company at Brooklyn in 1915 and through close application to business advanced rapidly.

Charles A. Hunter Passes Away

Charles Augustus Hunter, fifty-six years of age, former president of the Peerless Rubber Company, of North Bergen, N. J., and former director in the United States Rubber Company died May 4, at his home, No. 791 Hackensack Plank Road, North Bergen.

Mr. Hunter was born at Monroe, N. Y. He entered the employ of the Peerless Rubber Company as a shipping clerk in 1891. Not many years later he was elected president of the company. When the United States Rubber Company took over the concern he was elected vice-president and director and later, a director in the United States Rubber Company.

New European Manager for Firestone

Charles E. Speaks has recently been appointed to the important position of European manager for the Firestone Tire & Rubber Co. with headquarters in London. Mr. Speaks was formerly a colonel in the Motor Transport Corps and in the A.E.F.

Hurley Heads McGraw Sales

Announcement is made by John Morgan, president of the McGraw Tire & Rubber Company, of the appointment of W. H. Hurley as general sales manager of the company, succeeding C. E. Pumphrey, who resigned May 15.

Mr. Hurley is a veteran of the Spanish American War. Previous to his association with McGraw he was with the Ajax Rubber Company as district supervisor of Western territory. He has served in several capacities in the McGraw company, first as district manager at Kansas City, and later had control over the Eastern territory with headquarters at New York. About a year ago he was made assistant-sales manager of the company.

Chillicothe Officers Elected

The Chillicothe Tire & Rubber Co., of Chillicothe, Ohio, recently announced the following changes in personnel: H. G. Egbert, treasurer of the Master Tire & Rubber Co., of Dayton, was elected a director as well as secretary and general manager; H. J. Alperin, president of the Public Service Tire & Supply Co., Cleveland, was elected director and vice-president in charge of sales; A. Bernstein, president of the Nucord Tire & Rubber Co., of Cincinnati, director and vice-president, in charge of purchases. C. A. Hertenstein and Walter W. Boulger retain the offices of president and treasurer respectively.

Federal Branch Managers Meet

Branch managers from all of the sixteen branch offices and warehouses of the Federal Rubber Company met on May 12 at a dinner and conference at the Pfister Hotel, Milwaukee, Wis.

Certain revival of the automobile tire industry was predicted by General Sales Manager H. A. Githens in his address to the managers.

Tire sales are on the increase at the Federal Rubber Company branches in general, and a volume of business equivalent to last year's sales, is looked forward to in the next three months if the weather throughout the states is at all favorable for autoists this summer.

Tire Company Heads Indicted

B. E. Frantz, president, F. D. Spencer, secretary-treasurer, and V. V. Hendershott, C. B. Carpenter and E. Scott Cannell, members of the board of directors of the Knox Tire and Rubber Company were indicted May 10 by the Knox County grand jury, on a charge of selling stock to Jenkins & Company of Chicago at 17½ per cent, being two and a half per cent more than that prescribed by the commissioner of securities of Ohio.

The Knox Tire and Rubber Company is located in Mt. Vernon, Ohio, with buildings recently completed for the manufacture of automobile tires. The company is said to have sold stock in many cities and towns through the middle west. The company also maintained offices in Columbus.

Rubber Importations for April

Importations of crude rubber for the month of April, 1921, show a decided decrease when compared to importations for April, 1920, according to statistics recently released by the Rubber Association of America. According to these figures the importations for April, 1921, amounted to 17,269 tons. Imports for April 1920, totalled 23,675 tons while those for March, 1921, were 14,416 tons. Total importations for the first four months, ending April 30, 1921, amounted to 54,503 tons as compared to 109,670 tons imported during the corresponding period in 1920. Following are the detailed statistics:

PLANTATIONS

From	Tons
Rotterdam	715
London	1,308
Singapore	8,926
Colombo	4,177
Belawan-Deli	171
Batavia	681
Cochin	178
Sourabaya	478
Tandjong Priok	139
Penang	88
	16,861

CENTRALS AND GUAYULE

Centrals (Mexico and Central America)	5
Guayule (Mexico)	....
	5

PARAS

Manaos	47
Para	356
	403

GUMS, WASTE RUBBER, ETC., IMPORTED FROM VARIOUS SOURCES

	Tons
Waste	7
Balata	64
Miscellaneous Gums	226

COMPARISON 1920-1921

	Apr. 1920	Apr. 1921	Total importations 4 months ending, April 30th. 1920	1921
Plantations	21,036	16,861	97,049	49,834
Paras	1,893	403	9,432	3,941
Africans	628	——	2,521	689
Centrals	29	5	428	11
Guayule	79	——	227	25
Manicoba and Matto Grosso	10	——	13	3
	23,675	17,269	109,670	54,503

ARRIVALS PLANTATIONS FOR APRIL, 1921, SHOWING PORTS OF ORIGIN AND ARRIVAL

From	Arrived at	Tons
Singapore	New York	8,926
Penang	New York	88
Batavia	New York	681
Sourabaya	New York	478
Cochin	New York	178
Tandjong Priok	New York	139
Colombo	New York	4,094
Colombo	Boston	83
Rotterdam	New York	715
Belawan-Deli	New York	171
London	New York	1,308
		16,861

ARRIVALS OF PLANTATIONS BY PORTAS

Atlantic Ports	
New York	16,788
Boston	83
	16,861

No Hardships in Cotton Tariff

The passage of the Emergency Tariff bill by the Senate, on May 11, imposed a duty of 7 cents per pound on 1⅛ inch staple cotton, the "tire-makers' cotton". This means that supplies of Egyptian cotton will be practically shut off from domestic consumers for the next six months.

The effects of this tariff on the cotton situation here and on tire manufacturing costs will not be as serious as they would be under normal conditions. Inquiry throughout the trade disclosed that neither cotton mills nor tire manufacturers were at all worried about their raw cotton supplies.

On April 1, of this year there were 143,716 bales of Egyptian cotton in stock in this country, according to statistics compiled by one of the largest cotton houses. At the rate tire manufacturers have been absorbing long staple cotton this season, about 10,000 bales a month, there was enough Egyptian to last fourteen months. Including the supplies of Arizona-Egyptian in store, and granting a 33 per cent increase in the demand for tire fabrics within the next three months, there will scarcely be any distress in sight for months after the Emergency Tariff period is over.

"For the last month," said one prominent cotton man, "we have been waiting to see what the effect of the Emergency Tariff bill would be on the long staple cotton market here, and there hasn't been any. It is true that there is a little stronger tone to the Arizona-Egyptian market, and the general effect will be to bring the price of Egyptian Sakalliridis more into line with the domestic long staples.

"Tire manufacturers, for the most part are still drawing on the supplies they contracted for last year. Very few of them have been in the market for new supplies, and if they do come in there is enough on hand in this country to fill their needs for many months to come, when the carry-over from last year's Egyptian shipments and last year's Arizona crop is taken into account.

"If there should be any shortage of Egyptian or Arizona cotton, tire makers would turn to other grades of premium staple cotton for their tire fabric".

Exports of Rubber Goods for March

Statistics recently issued by the Bureau of Foreign and Domestic Commerce, of the Department of Commerce, indicate that the exports of rubber goods and insulated wire cables from the United States during the month of March, 1921, suffered a decided decrease as compared to figures for February, 1921. According to the figures the exports for March totalled $2,827,397 while those for February amounted to $4,300,531. This does not include exports to Porto Rico and Hawaii which were $211,437 as compared to $146,626 for February.

The value of articles exported during March, 1921, not including those to the islands above mentioned were as follows: belting, $104,174; hose, $189,975; packing, $66,695; boots, $49,900; shoes, $204,914; druggist's rubber sundries, $87,161; soles and heels, $36,186; auto tire casings, $749,610; inner tubes, $99,363; solid tires, $79,324; all other tires, $40,972; all other manufactures of rubber, $397,476; insulated wire and cables, $721,647.

Exports to Porto Rico and Hawaii for March were as follows; belting, hose and packing, $14,766; automobile tires, $160,146; all other tires, $5,022; all other manufactures of rubber, $31,503.

Demand for Tire Fabric Increases

An executive of one of the largest concerns manufacturing tire fabrics exclusively, in a recent statement on current business in tire fabrics, stated that he thought the situation was beginning to look decidedly brighter.

"We have had a number of calls for delivery during May of goods which we have been holding for tire companies and there are indications that things are slowly beginning to improve," he said. "Four out of five of our mills are operating on part time and we expect to reopen the other in about two weeks. Stocks of finished goods on hand at the mills do not amount to more than thirty days' supply, and we have about four months supply of cotton on hand. There have been no cancellations in our industry and our mills are sold ahead for months. It is simply a question of waiting until the tire companies can take deliveries. They are rapidly approaching this stage."

An executive of another firm supplying Goodrich, Goodyear, United States Rubber and other large tire manufacturers also took a more cheerful view of the situation. He said that instructions for delivery were beginning to come in and mills on the average had no more than thirty days supply of fabric, while tire companies according to his information had committments on high priced fabric that would last only till June or early July.

He based this statement on the fact that although tire companies had fixed-price contracts for fabric sufficient for 40,000,000 tires for 1920, only about 30,000,000 were actually produced last year, leaving a surplus of fabric contracts carried over into 1921 sufficient for making 10,000,000 tires. On the basis of last year's production this is a four months supply.

He pointed out that although the rubber companies had made the mistake of enormously increasing production during the Winter of 1919-1920, production had been so greatly curtailed in a recent month as to dip below the peak production of one large plant during a week of 1920. On the other hand tire consumption has continued at a high point during the mild Winter season and gasoline consumption in January 1921 was equal to that of May 1920, which would seem to indicate that tires are being consumed at more than normal rate.

Manufacturers of tire fabrics are in an entirely different position from other cotton mill owners since, although their production has been sold to tire companies from six months to three years ahead, very few mills are operating because they cannot make deliveries.

Most of the long term contracts are not at fixed prices but at sliding scales, based on the cost of cotton, and prices are fixed three to six months ahead. Tire companies are not committed for large supplies at peak prices, and as cotton held by mills is said to vary from one to six months supply the tire manufacturers will have to absorb this stock before they will be able to take advantage of cheap cotton.

MARKETS

Manufactured Rubber Goods

The difficulty with business in rubber goods during the current month has been that many lines, such as rubber footwear, rubberized clothing and druggists' sundries, are undergoing their between-season period.

There is an ever-increasing demand for tires. When the price-reducing activities of the various tire manufacturers have simmered down to a normal state of affairs, dealers who have been holding off for the time being will be in the market again with greatly augmented orders.

Tire manufacturers in Akron are now pointing toward increased production schedules. Although at least three of the largest companies are turning out an average of 15,000 tires a day, it will still be some time before factories which have been marking time for months can work up to their production schedules of last year.

AUTOMOBILE TIRES

The past two weeks have seen a general reduction in the price of tires in all quarters. Both large and small manufacturers hastened to meet the reduced prices initiated by the Goodrich company with similiar revisions. Not all, however, reduced their quotations to the same extent.

The fact that in certain quarters an inclination to fight the decline was noted developed into a problem of vital importance to the tire trade. Some of the leading tire makers reduced their cord tires only 11½ or 12 per cent and stood pat on these reductions for the time being.

The next few weeks will tell whether those resisting the price declines at the present time will have to take the step to lower levels. The opinions of most of the factors interviewed during the last fortnight were that the more conservative tire operatives would make further readjustments by July 1.

In the meanwhile the companies which made the most drastic cuts reported that the first three weeks of May had seen the heaviest rush of orders seen so far this year, One company went so far as to claim an increase of 150 per cent for May over April.

It is true that weather conditions have been extremely favorable toward the launching of a big tire year. But for most of the tire companies business marked time until the air was cleared. Dealers preferred to sit tight and see how far the wave would go. The first two weeks of May saw a temporary slump in the demand. But the price reduction to a pre-war basis served as a stimulus to the long delayed spring and summer buying demand.

A reduction of 20 per cent, involving, as it does, a proportionate drop in the profits, makes it necessary for the producers to sell more tires in order to hold their own. There seems to be a good deal of confidence as to the chances of accomplishing this. In fact some persons have been talking of the likelihood of a tire shortage. Tire consumption this year is expected to closely parallel and possibly exceed that of 1920 and it is pointed out that none of the large tire companies are in a position to attain the output that they did between March 1 and September 1 of 1920. The same 9,000,000 motor cars will be wearing out tires and some 500,000 new cars will be sold. On this basis, the country-wide demand is expected to take care of from 35,000,000 to 40,000,000 tires this year.

Production has increased steadily during the past month and schedules approximating normal are being resumed. A recent dispatch states that the Hood Rubber Co. at Watertown, Mass., began working three full shifts for the first time since last fall. Reports from Akron have been over-sanguine at times, but there is no doubt that production is on the up grade in the rubber metropolis.

MECHANICAL RUBBER GOODS

Business in mechanical rubber goods has been proceeding at about 60 per cent of the 1920 volume of transactions. The tone of affairs has been quiet with demand from the large industrial users within the more or less restricted margins suggested above.

Labor trouble at some of the large paper mills has had a reaction on the rubber business. Some paper mills have shut down entirely for the time being and since this industry represents a considerable part of the consuming demand for belting its absence from the market for mechanicals recently has been severely felt.

Garden hose has been one of the big items during the spring season. As one man put it, "If we don't sell garden hose during May and June, when will we sell it?" Good sized lots are being passed along to the retailer, but there is no telling how well the retailer is distributing the goods. The manufacturer will know by the end of June when plans for the next spring's business will be under consideration.

The stone and cement industries have been fairly active this year owing to the large building campaigns under way, and some manufacturers of belting and packing have found these industries frequently in the market for supplies.

The main trouble has been the absence of railroad buying. Railroads have curtailed their purchases of materials to the minimum amount this year. This policy has applied to air brake hose and pneumatic hose. As these articles are guaranteed to last two years, buyers can stay out of the market for supplies for a considerable period. The mechanical rubber goods trade is more interested in what the railroads propose to do than practically anything else. The belief prevails that the railroads will hold out as long as they can, that is, until they have absolutely run out of the stocks they took in last year. In other directions the mechanical rubber industry reflects the general industrial conditions of the entire country. There is keen competition for the business in sight; the buyer is reluctant to make committments, save at concessions and although prices have a wide range, they are time and again forced down to meet the buyer's views.

The industry has seen no marked change in labor costs but it is reported that the efficiency of the help employed today is far ahead of that noted last year.

RUBBER FOOTWEAR

There has been a spirited demand for white rubber goods for spring and summer consumption, and manufacturers who counted on this at this time of the year have not been disappointed. Tennis goods and white shoes for summer wear have been big items for the footwear trade.

In other directions, trade has been markedly dull. Almost all retail merchants who distribute rubber footwear have placed their orders for the fall and have restricted them greatly owing to the fact that they have large stocks of goods left from last winter on their hands to be carried over to the latter part of this year. All of them are carrying large stocks of heavy boots and farming and lumbering footwear.

Dealers have lacked the confidence to place future orders in any great volume and have rather been playing for a quick turnover of the merchandise they are handling.

The tendency of manufacturers has been to proceed very cautiously and proportion their output to the curtailed demand. Most factors have cut their production heavily. The Boston Rubber Shoe Company of Malden, Mass., employing over 3,000, has posted notices announcing a shut-down from May 27 to July 5.

DRUGGISTS' SUNDRIES

There has been a steady routine business in druggists' sundries at a more lim-

ited pace, however, than was noted a month ago. Factors in the trade who were interviewed by a representative of THE RUBBER AGE pointed out that this was normally the dull season of the year for manufacturers of druggists' sundries.

For some items no slackening in the consumer demand is noted. Fountain syringes have been going fairly well all year but business in hot water bottles has been dull. At present there is a very good demand for bathing caps and other bathing accessories such as rubber belts and earstoppers. One interesting development recently has been the aggressive campaign pushed by one manufacturer to market a new type of belt with a rubber content in the local district.

On the whole, dealers have shown a tendency, characteristic of all business in the readjustment period, of restricting their orders to merely current or immediate requirements and this has tended to keep manufacturers uncertain as to their production schedules.

MISCELLANEOUS

The rubberized clothing trade is undergoing a quiet period, with the advent of warmer weather. There has been much less interest shown in rubberized clothing, and very little call for mackintoshes. Rubber surface apparel has been in somewhat better demand. The present stage of the year is by no means the busy point for manufacturers, and a good many have either greatly curtailed their output or shut down entirely. Dealers when approached for Fall business have been extremely conservative.

There is a steady business in a number of the hard rubber specialties, and automobile accessories. The demand for storage battery casings has fallen off suddenly, much to the distress of the manufacturers who supply this article.

Sporting goods, such as golf and tennis balls and other athletic equipment are the bright spots at the present time. With the seasonal consumption of these items in full swing there is no sign of dullness in this department.

Cottons, Yarns and Fabrics

The cotton market has been steady with a stronger undertone during the past fortnight, and while values failed to advance as far as the more bullish faction anticipated, crop conditions and foreign news were both favorable to a recovery in prices.

Quotations on middling spot firmed up from an average of 12.65 during the second week of May to 12.95 and 13 cents. By May 20, July options also advanced moderately to a basis of 13.05 to 13.10, the gain amounting to about $1 per bale.

The fact that Germany seemed intent on yielding in the reparations issue and the hopeful reports from London and Liverpool were regarded as encouraging signs. The first Government crop report due about May 25 was expected to be bullish in view of the rains and cool weather in the cotton belt.

Other encouraging features were the assistance promised by the War Finance Corporation which has adopted a very liberal policy of advances on cotton, whether sold or consigned. Exporters are fully aware of the chances of a profitable business resulting, and plans are being perfected which will undoubtedly result in a decided increase in exports. Incidentally, as the New York stock of cotton consists almost wholly of desirable cotton, Strict Middling, Middling and Strict Low Middling, it would seem only reasonable to expect shipments of importance to be made from here by obtaining control of July contracts and accepting delivery of the cotton.

There has been little or no speculative liquidation in the past few days, and with these bullish prospects in view it required only limited buying to start an improvement. A short covering movement begun in the third week of the current month was sufficient to send prices up an average of 20 points.

Price Fluctuations

ADVANCED

Ducks, single filling, ½ cent per yard
Sheetings, 40-inch 2.50-yard, ¼ cent per yard.
Sheetings, 40-inch 3.60-yard, ½ cent per yard
Sheetings, 40-inch 3.75-yard, ¼ cent per yard

DECLINED

Ducks, belting, 3c per pound
Hose ducks, 2 cents per pound
Drills, 37-inch, 3.25-yard, ½ cent per yard
37-inch, 3.50-yard, ½ cent per yard
37-inch, 2.75-yard, ¼ cent per yard
Osnaburgs, 40-inch, 7-ounce, 1½ cents per yard
Sheetings, 40-inch, 4.25-yard, ¼ cent per yard
Tire fabrics, 17¼-ounce, Egyptian combed, 5 cents sq. yd.
Tire fabrics, 17¼-ounce, Egyptian carded, 5 cents sq yd.

Despite the favorable turn to the situation, the market has on the whole been apathetic, the principal deterrent to speculative activity being the unfavorable labor outlook in England with the probability that the coal strike will continue for some time. The abundant stocks of cotton on hand both in the North and in Southern warehouses are also considered. In the last three months there has been a determined effort to push the cotton market up, and the net result has been a gain of approximately 1 cent per pound, which is not considerable when it is remembered that the market is about 30 cents lower than it was this time last year.

PREMIUM STAPLE COTTON

There has been so little actual business transacted in the market for long staple cotton that it is still difficult to get an accurate idea of prices. However, mills are gradually resuming operations on a larger scale.

Officials of large cotton houses admitted that the outlook was still discouraging and that mill operators had a large enough supply on hand to cover their needs for months to come.

Quotations were nominal at 22 cents per pound for 1-3/16 inch, New England mills. For the 1¼ inch variety some factors were offering at 23 to 24 cents, but others were holding out for 25 cents, New England mills, with prices usually two cents lower at Southern points.

There has been no business whatsoever in Sea Islands and the scarcity of this grade has tended to keep quotations steady and nominal at 45 cents in the Savannah market.

EGYPTIAN COTTON

On May 16 there was a sharp break in the market for Egyptian Sakellaridis on the Alexandria exchange. Fully good fair. Sakellaridis was quoted down to a basis of 22 cents for July delivery, Alexandria, making the price c.i.f. Boston, about 28¾ cents per pound, exclusive of the duty imposed by the Emergency Tariff.

A number of factors in the trade were inclined to attribute the sharp drop of about 4½ cents per pound to the passage of the Emergency Tariff. But the best informed opinion has held that the import tax would not affect the situation in any way, and has accounted for the break in the market by the absence of spinner buying, the insufficient Government support, and confused local politics.

Commission houses were not inclined to do any buying of future shipments unless the seller guaranteed payment of duties. So far it is not generally known just who will bear the burden of the duty. From the movement of prices in the primary market it looks as if the seller will stand most of it.

Reports from Alexandria have not as yet indicated signs of a trade revival in the Continental centers. The political situation is rather disturbed, and the causes of the recent break in prices are not yet clearly accounted for. Advices on the 1921 crop state that climatic conditions have been abnormal and have affected the young plants and the germination of seed unfavorably while none of the delay previously reported has yet been recovered.

ARIZONA EGYPTIAN COTTON

The fundamental condition of the Arizona-Egyptian cotton market has been considerably improved within the last two weeks, in contrast to that of the Egyptian market, but there has been so little actual buying interest shown by spinners that prices are at a somewhat lower basis than as given in our last report.

High grade Arizona has been quoted at 31½ cents per pound for the No. 2 Pima, but an offering was heard of in the local market at as low as 30 cents. The No. 1 Pima grade ruled at from 30 to 30½ cents per pound. The lower prices were accounted for by the absence of Egyptian competition.

At its present market level, Arizona cotton is considered an extremely good buy. It must be remembered that it was selling above $1 a pound around this time last year, and that most of the farmers'; holdings are in the hands of the banks as a result of the sensational declines during the past eight or nine months. However the tire trade is well stocked ahead and is not expected to be in the market until late in the Summer when prices may rule comparatively higher.

TIRE FABRICS

Although there has been a slightly better feeling noted in the market for tire fabrics, actual business has been so slight as to give little support to prices. There were recessions of from 3 to 5 cents in the whole list of tire fabrics. The principal factors marked down their quotations in an effort to get nearer the basis at which consumers would buy.

The rubber tire industry did practically no buying whatsoever during the last period, for the simple reason that most of the large companies have sufficient supplies to cover them for months to come. A few of the mill representatives seen recently, reported more frequent orders from tire companies who were bound to long contracts for future shipments. Others reported no delivery orders whatsoever. One large mill, however, stated that considerable business was being done with tire operatives and that deliveries were called for more frequently than at any time previously this year. As this mill supplies a goodly part of the Akron trade, indications are that the tire manufacturers have been gradually eating into their available supplies and are doing so at a more accelerated pace at the present time.

HOSE AND BELTING FABRICS

Single filling ducks which ranged from 11 to 13 cents per yard in our last report narrowed slightly as to range and the inside price was somewhat higher at 11½ to 12 cents. There is not a great abundance of this line, but of course the demand is not healthy enough to send prices up. Other lines, such as belting ducks and hose ducks underwent moderate declines, with some brokers quoting lower than the market constantly under pressure to sell. Belting ducks ruled about 3 cents lower and hose ducks 2 cents lower at 28 cents per pound.

Enameling ducks were nominal and unchanged and the same held for shoe ducks which have been in comparatively better demand this season, owing to the good business in light rubber shoes. Consumers recently have been buying in hand to mouth lots and the outlook for a stable market was not encouraging. Some factors went so far as to venture that prices would work down to an even lower basis within the coming weeks.

DRILLS, SHEETINGS AND OSNABURGS

For the first time in many months there have been advances from ¼ to ½ cents per yard in sheetings under more favorable demand from converters and for export account. There has also ben a better print cloth market and the sheetings market has reacted in sympathy with print cloths.

During the past two weeks a fair buying demand for all grey goods developed, the inquiries for the 40 inch, 2.50 yard, and the 40 inch, 3.60 yard being especially numerous. Other sizes of sheetings were dull and disclosed further weakness, but on the whole there was more optimism noted in the market than in a long time.

The osnaburgs were featureless and there was practically no call for them. The 40 inch, 7 ounce size dropped 1½ cents per yard to a basis of 7½ to 8 cents per yard. The 30 inch 7 ounce size underwent a fractional decline and was much firmer, at the lower price.

The drills have formed the weakest link in the market. There has been no consuming interest displayed in them, and prices have continued to drop steadily as if there were no bottom to the market. Most of the declines in this department were small, ranging from ½ to ¼ of a cent per yard, but they were uninterrupted.

The market in burlaps broadened out somewhat and there was a larger volume of transactions reported but at considerably lower prices. For some time the demand had centered only upon the lightweight burlaps, and recently such large tonnages of these grades have been brought in as to make prices much easier. The lights dropped from 25 to 40 points during the fortnight, while the 10 ounce burlaps were practically unchanged. There were also easier cable advices from Calcutta, where some of the mills reduced their prices for future shipments to a level that was about 25 per cent below the prewar average. One large factor reported however that he had sold lots of several thousand pounds each to rubber manufacturers.

TIRE FABRICS

17¼-ounce Sea Island, combed, sq. yd.		Nominal	
17¼-ounce Egyptian, combed	.75	@	—
17¼-ounce Egyptian, carded	.65	@	—
17¼-ounce Peelers, carded	.50	@	.55
17¼-ounce Peelers, combed	.67	@	—

DUCKS

Belting (pound basis) ....lb.	.25	@	.28
Hose (pound basis) ....lb.	.28	@	—
*Enameling ....lb.	.28	@	.30
Shoe Ducks ....lb.	.35	@	—
Single filling ....yd.	.11½	@	.12
Double filling ....yd.	.13	@	.14

*Price varies according to width.

DRILLS

37 inch	3.25-yard	....yd.	.06¾	@	.07
37-inch	2.75-yard	....yd.	.08¼	@	—
37-inch	3.00-yard	....yd.	.07¾	@	—
37-inch	3.50-yard	....yd.	.06½	@	—
37-inch	3.95-yard	....yd.	.06⅜	@	—

OSNABURGS

30-inch	7-ounce	....	.06¾	@ —
40-inch	7-ounce	....	.07½	@ .08

SHEETINGS

40-inch	2.35-yard	....yd.	.10	@	—
40-inch	2.50-yard	....yd.	.09½	@	—
40-inch	2.85-yard	....yd.	.08	@	—
40-inch	3.15-yard	....yd.	.09¼	@	—
40-inch	3.60-yard	....yd.	.08¼	@	..
40-inch	3.75-yard	....yd.	.07	@	—
40-inch	4.25-yard	....yd.	.05¾	@	.06

Note—In view of the unsettled conditions prevailing in the market at the present time, the prices quoted above are more or less nominal, and are not guaranteed.

BURLAPS
(Carload Lots)

7 -ounce	40-inch	....lb.	3.60	@	——
7½-ounce	40-inch	....	3.60	@	——
7½-ounce	45-inch	....	4.20	@	——
8 -ounce	40-inch	....	3.65	@	——
8½-ounce	40-inch	....	3.75	@	——
10 -ounce	36-inch	....	4.10	@	——
10 -ounce	40-inch	....	4.15	@	——
10 -ounce	45-inch	....	5.00	@	——
10½-ounce	40-inch	....	4.00	@	——

Chemicals and Compounding Materials

Mixed sentiment has prevailed in the market for chemicals and compounding materials. A glance at the current price movements is sufficient to convince one that the main trend of prices is still downward. On the other hand the greater activity of consumers, even rubber manufacturers in the market recently, the cleaning up of distressed lots and the disturbed labor conditions in England tend to make some items scarcer and slightly higher in price.

Price Fluctuations

ADVANCED

Antimony sulfuret, crimson, 5c per lb.
Benzol, 90 per cent, 1 to 3 cents per lb.
Sodium nitrite, 2 cents per lb.
Soya bean oil, ½ cent per lb.
Glycerine, cans, ½ cent per lb.
Naphtha, motor gasoline, 1 cent per. gal.
Napthalene balls, 1c per lb.
Rapeseed oil, refined, 4 cents per gal.

DECLINED

Acetanilid, c. p. bbls., 1 cent per lb.
Muriatic acid, 30 cents per cwt.
Sulphuric acid, $1 per ton.
Carbon tetrachloride, 2 cents per lb.
Casein, c. p., 3 cents per lb.
Caustic soda, 76 per cent, 5 cents per cwt.
Corn oil, crude, 50 cents per cwt.
refined, 50 cents per cwt.
Petrolatum, 1 cent per lb.
Solvent naphtha, ½ cent per gal.
Stearic acid, 1¾ cents per lb.

Among the materials which were inclined to advance during the past fortnight were benzol, which gained from 1 to 3 cents per pound; glycerine which climbed fractionally and napthalene. Benzol was rather scarce and deliveries fell behind.

The heavier chemicals, especially those largely used by the tire manufacturers have been picking up gradually. Producers reported a decidedly improved demand for zinc oxide, with increasingly heavier tonnages moving out to consuming channels. Lithopone has also held up very well, although the rubber trade has not been buying it to any extent.

Most of the crudes were quiet but comparatively firmer. Anthracene moved slowly, with sellers quoting a somewhat higher range. Naphthalene balls were steadier, and although orders were of a restricted character, the demand was sufficient to prevent any large accumulations.

The intermediates were quiet and devoid of special features. Aniline oil firmed up to some extent, although lots could still be secured at 1 cent below the open market quotation. Demand was spotty for almost all intermediates, buyers being content in most cases to purchase only for immediate requirements.

IMPORTS AND EXPORTS

Export inquiry for benzol, 80 to 90 per cent, was said to be much better than it had been for some time, and while there is little being exported at present it is said that large United Kingdom buying orders are finding their way into the domestic markets. Some re-shipments of aniline oil were anticipated by the trade from Japan, as receivers of the goods have been unable to pay for the merchandise.

The disturbed industrial conditions in the United Kingdom have had the effect of tightening the supplies of oxide reds and other earth colors. Receipts in the port of New York have been very light, and the price of Indian red, and copperas red, has been very firm.

BARIUM PRODUCTS

The market for dry blanc fixe has weakened further and although principal factors are quoting 4 cents per pound for carload lots, it is intimated that better can be done on a firm bid. Supplies have been very heavy and have not been moving. Most of the large producers have not yet re-opened their plants which have been shut down since the beginning of this year. Barytes prime white, has been in better demand, but at that the market has been a very dull affair with prices fairly steady at $24.50 to $26.50, f.o.b. mills, packages extra.

DRY COLORS

The rubber trade has been showing greater interest in mineral colors, especially the oxide reds. Pure Indian red, has been very firm at 13½ cents per pound, and this together with copperas red has been facing a threatened shortage as shipments recently have not been sufficient to meet the demand. The oxide reds, (pure copperas) were quoted at 13½ cents per pound for the light and 14½ cents for the dark grade.

Chrome yellows have shown no tendency to descend lower than the 21 cent price which they reached some weeks ago. Buying has improved and producers are waiting for a chance to mark up their prices. The iron blues have also been firmer, since the importers of the German blues have advanced their c.i.f. quotation. There has been a somewhat better buying interest in ultramarine blues manifested by the rubber trade.

LEAD PIGMENTS

The advance of pig lead has made the position of lead corroders somewhat stronger with regard to their finished product than it has been recently. At the lower price scale reached two weeks ago, litharge orange mineral and dry red lead have been in better favor with consumers. The first two weeks of May saw a larger amount of litharge and red lead shipped to consumers than at any other time this year. White lead, basic carbonate, has been unchanged with the large producers quoting 8 cents per pound and some smaller factors under-quoting them at 7½ cents. Tire manufacturers still have ample supplies on hand. There has been a fair buying demand for sublimed blue lead and prices have been firm for the period under review.

LITHOPONE

Demand for lithopone has been picking up, but it is still far behind the volume of business transacted around this time last year. The price has been firm at 7 cents in bags and 7¼ cents in barrels, car load lots. The L. C. L. price has also been steady at 7½ cents. There have been large tonnages of lithopone sold to the paint trade this spring, but the tire industry and rubber manufacturers have been very slow. One producer who usually gets a large part of the Akron business stated that he was only selling a carlot or so of lithopone to rubber people these days. This is due to the fact that the tire makers are using very little lithopone, most of it being taken by the mechanical rubber manufacturers who are undergoing a quiet spell at the present time.

TALCS AND CLAYS

The market for talc has been very stagnant and prices have been nominal. Whenever a buyer appears in the market the price is likely to be something as near his ideas as the seller can get. There have been abundant supplies of domestic talc at $18 to $20 per ton and low grade French at $22.50, but there was very little interest displayed in these items. The high grade French and Italian tales have been in better demand at prices ranging all the way from $45 to $60 per ton. Imported china clay has been dull, too, at quotations ranging from $18 to $25 per ton with the domestic lump quoted at around $10 to $12 per ton.

WHITING

Business in whiting has been considerably restricted during the past month or two owing to the influx of by-product whitings and imported materials which seem to be competing successfully with the English chalk whitings. Prices have been unchanged at $1.15 per cwt. for commercial whiting, and $1.65 for English cliffstone whiting. Buying has been spotty. Some producers have reported that they are beginning to sell a little to the rubber trade again. Conditions on the whole are more favorable, but the market is very quiet. By product whitings are being used widely at the present time by the rubber trade and by other industrial consumers. If their use should become even more widespread and should prove satisfactory it may mean that English chalk whitings will drop out of the rubber industry. Meanwhile producers of the pure article are marking time pending results.

ZINC OXIDE

After a long lull the zinc oxide industry is picking up rapidly. Producers state that conditions at the present time are about 50 per cent better than two months ago, when many of the tire manufacturers had almost shut down. Within the past fortnight consumers have been making fresh contracts whereas they were merely working on postponed deliveries up to the end of April. One of the largest producers of zinc oxide stated that he was shipping big tonnages of zinc oxide out to Akron. Prices have been firm and unchanged at 8¾ cents per pound for the commercially lead free, carlots, 8 cents for the 5 per cent lead sulphate grades and 7⅝ cents for the 35 per cent lead sulphate grades, in carload lots.

CRUDES

Benzol, 90 per cent has reacted somewhat from its low levels and under better export inquiry and improved domestic demand was quoted up 1 cent per pound, ruling at 25 to 31 cents per pound. Supplies have narrowed considerably and the strike in England has also been a bullish feature of the current market. Phenol dropped to 9 cents at one time but at the last it was on the upgrade at 9½ cents per pound. As high as 16 cents per pound is exacted for prime white crystals in small drums. Business in 1000 pound drums has been quiet latterly, but a fair demand was noted for smaller containers from consumers in the dyestuff and chemical compounding industry. Export trade continued slow. Most of the other crudes were quiet and without change.

INDUSTRIALS

There was an advance of 5 cents per pound in crimson antimony sulfuret which ruled at 45 to 55 cents per pound and was comparatively scarce. Other grades of antimony sulfuret were unchanged, while in better demand. Carbon tetrachloride weakened further, being quoted down 2 cents to a level of 10 to 12½ cents. Stocks have been heavy and some new distressed lots have appeared on the market. Supplies of carbon bisulfide moved more briskly and were firm at 6 to 7½ cents per pound. The call for antimony has picked up considerably, but until the large reserves in the hands of the rubber industry are absorbed there can be no hope of real improvement in the market. Formaldehyde was the subject of a good spot demand at 14½ to 16 cents per pound.

INTERMEDIATES

Business in intermediates has been "spotty", buyers contenting themselves with purchases for immediate wants only, and coming in in little spurts. Anthracene has been dull with sellers quoting 80 to 85 cents for 80 per cent. Acetanilid disclosed further weakness being quoted down to 21 cents per pound in barrels on spot. Aniline oil was generally offered at 20 cents, but 19 cents was usually the settling price. The market, however, has revealed a stronger undertone within the past week or so. Dymethlaniline also sagged under continued absence of consumer interest losing 5 cents per pound during the fortnight. There was somewhat better interest shown in anthraquinone which held to $1.50 to $2, owing to the fact that a new interest has gone into the producing end and has promised to place his product on the market at much lower prices than any of his competitors.

ACCELERATORS

Organic

Aldehyde, ammonia, crystals	lb.	$1.05	@	1.15
Aniline oil, bulk basis,	lb.	.19	@	.26
Excellerex,	lb.	.75	@	..
Hexamethylene-tetramine (powdered)	lb.	.90	@	.95
Paraphenylene-diamine	lb.	2.00	@	2.10
Thiocarbanilid	lb.	.65	@	.70
Vulcocene	lb.	.35	@	..

ACCELERATORS

Inorganic

Lead, dry red, bbls	lb.	.08¾ @	.09¼
sublimed blue	lb.	.07¼ @	.07½
sublimed white	lb.	.07¼ @	.07½
white basic carbonate	lb.	.07½ @	.08
Litharge, commercial, bbls.	lb.	.08¼ @	.08½
Lime flour	lb.	.02½ @	..
Magnesia, calcined, light	lb.	25 @	.30
calcined, heavy	lb.	.06 @	.06½
Magnesite, powdered	ton	50.00 @	65.00

COLORS

Blacks

Bone, powdered	lb.	.06½ @	.08½
Carbon gas	lb.	.10½ @	.20
Drop	lb.	.08 @	.16
Ivory	lb.	.11½ @	.45
Lampblack	lb.	.17 @	.45

Blues

Prussian	lb.	.60 @	..
Ultramarine	lb.	.12 @	.35
Cobalt	lb.	.25 @	.30
Rubber maker's blue	lb.	3.50 @	..

Browns

Iron oxide	lb.	.07 @	..
Sienna, Italian, raw burnt	lb.	.06 @	.15
Umber, Turkey, raw and burnt	lb.	.05 @	.06½

Greens

Chrome, light, c. p.	lb.	.36 @	.40
medium	lb.	.40 @	.52
dark	lb.	.52 @	.58
oxide	lb.	.66 @	..

Reds

Antimony, crimson sulfuret	lb.	.45 @	.55
red	lb.	.25 @	.28
golden	lb.	.25 @	.30
Indian, pure,	lb.	.13½ @	.16
oxide, copperas, light	lb.	.13½ @	..
dark	lb.	.14½ @	..
Para toner	100 lb.	1.50 @	1.70
Toluidine toner	lb.	3.25 @	3.50
Tuscan	lb.	.17½ @	.30
Venetian	lb.	.02½ @	.03½
Vermillion, English, quicksilver	lb.	.90 @	1.10
domestic	lb.	.25 @	.30

Yellows

Chrome, light, c. p.	lb.	.21 @	..
dark	lb.	.21 @	..
medium	lb.	.21 @	..
Ocher, French	lb.	.03¼ @	.04
domestic strong	lb.	.03 @	.05
Zinc chromate	lb.	.40 @	.50

COMPOUNDING INGREDIENTS

Aluminum flake, bags	ton	27.00 @	..
bbls.	ton	33.00 @	..
Aluminum silicate	ton	17.00 @	24.00
Ammonium carbonate, powdered	lb.	.09 @	.10
Barium dust	lb.	.05 @	..
Barytes, Southern off-color, f.o.b. mills	ton	16.50 @	18.00
Western, prime white, f.o.b. mills	ton	24.50 @	26.50
Blanc fixe, dry, f.o.b. works	lb.	.04 @	.04¼
Cadmium sulphide	lb.	1.20 @	1.30
Casein, c. p.	lb.	.42 @	.45
Chalk, precipitated, extra light	lb.	.02¾ @	.03¼
heavy	lb.	.02¼ @	.02½
Clay, China, domestic, lump	ton	9.00 @	14.00
imported	ton	16.00 @	25.00
Dixie	ton	22.00 @	35.00
Blue Ridge	ton	22.00 @	35.00
Formaldehyde	lb.	.14½ @	.16
Fuller's Earth, powdered	ton	22.00 @	..
Fossil flour	ton	60.00 @	..
Genasco, mineral rubber	ton	50.00 @	52.00
Gilsonite	ton	60.00 @	65.00
Glues, extra white	lb.	.30 @	.40
medium white	lb.	.25 @	.30
cabinet	lb.	.20 @	.35
cabinet low grade	lb.	.17 @	.19
common bone	lb.	.13 @	.19
Graphite flake, bbls.	lb.	.14 @	.20
powdered	lb.	.04 @	.10
Ground glass, fine	lb.	.03½ @	.04
Hydrocarbon, hard	ton	35.00 @	45.00
soft	ton	35.00 @	40.00
Infusorial earth, powdered	lb.	.02 @	.03½
bolted	lb.	.03½ @	..
Lime flour	lb.	.02½ @	..
Liquid rubber	lb.	.16 @	..
Lithopone, bags, car lots	lb.	.07 @	..
bbls.	lb.	.07¼ @	..
M.R.X., mineral rubber	ton	80.00 @	90.00
Napthalene	lb.	.09 @	.11
Orange Mineral	lb.	.11¾ @	.13½
Plaster of Paris	bbl.	4.25 @	5.00
Rotten Stone	lb.	.02½ @	.04½
Rubber Substitute, black	lb.	.08 @	.16
white	lb.	.10 @	.18
brown	lb.	.12 @	.17
Silica (silex)	ton	12.00 @	35.00
Soapstone, powdered	ton	12.00 @	15.00
Starch, powdered corn	cwt.	2.18 @	2.56
French	ton	22.50 @	30.00
Sulphur, gour, commercial	ton	16.00 @	20.00
flour, commercial	cwt.	1.45 @	2.10
Sulphur, chloride, drums	lb.	.06¾ @	.07
(see also Colors, Antimony)			
Talc, domestic	ton	18.00 @	20.00
French	ton	22.50 @	30.00
French, high grade	ton	40.00 @	42.50
Italian	ton	57.00 @	65.00
Terra Alba,			
American No. 1	cwt.	1.85 @	2.00
American No. 2	cwt.	1.25 @	..
Tripoli	lb	.02½ @	..
Whiting, domestic	cwt.	.75 @	.80
Quaker	ton	13.00 @	15.00
English chalk, commercial	cwt.	1.15 @	1.20
glider's bolted	cwt.	1.20 @	1.30
Paris white	cwt.	1.40 @	1.50
English cliffstone	cwt.	1.65 @	1.75
Vorite, Rubber Substitute			
"Soft"	lb.	.14 @	..
"A"	lb.	.14½ @	..
"C"	lb.	.14½ @	..
"Special"	lb.	.14½ @	..
Zinc Oxide—			
French process, red seal	lb.	.10 @	.10½
white seal	lb.	.12¼ @	.12½
green seal	lb.	.11 @	.11½
Leaded grades, American process—			
Commercially lead free	lb.	.08¾ @	.09¾
5 per cent lead sulphate	lb.	.08 @	.08½
10 per cent lead sulphate	lb.	.07¾ @	.08¾
20 per cent lead sulphate	lb.	.07¾ @	.08¼
35 per cent lead sulphate	lb.	.07⅝ @	.08⅛
Zinc sulphate	lb.	.03¼ @	.03½

SOFTENERS

Acids

Acetic, 28 per cent	cwt.	2.50 @	2.75
Carbolic (phenol)	lb.	.09 @	.10
Cresylic, 97 to 99 p. c. pale	gal.	.65 @	.75
Muriatic, 20 degrees	cwt.	1.20 @	1.50
Nitric, 36 degrees	cwt.	5.50 @	6.00
Sulphuric, 66 degrees	ton	19.00 @	20.00
Tartaric, crystals	lb.	.39 @	..

Alkalies

Caustic soda, 76 p. c.	cwt.	3.65 @	3.75
Soda ash, 58 p. c.	cwt.	1.90 @	2.10

Oils

Castor, No. 3 bbls.	lb.	.07¾ @	.08½
Corn, crude, bbls.	cwt.	7.38½ @	..
refined	cwt.	9.26 @	..
Chinawood, bbls.	lb.	.11¾ @	.12¼
Cottonseed, crude,	lb.	5.25 @	..
prime summer yellow	lb.	.06¾ @	..
Glycerine, c. p. drums	lb.	.17 @	.17½
Linseed, carload spot	gal.	.71 @	..
bbls. 1. c. l.	gal.	.74 @	..
Palm, Niger	lb.	.06¼ @	.06½
Lagos	lb.	.07¼ @	.07½
Peanut, domestic crude	lb.	.05¾ @	.07
Pine, steam distilled, over .933 sp. gr.	gal.	1.30 @	1.35
Rapeseed, refined	gal.	.90 @	..
blown	gal.	.85 @	..
Rosin, first rectified	gal.	.36 @	..
second rectified	gal.	.38 @	..
Tar, commercial	gal.	.35 @	.37
Soya Bean, crude, bbls.	lb.	.07½ @	.07¾

Resins and Pitches

Cantella gum	lb.	.50 @	..
Cumar resin	lb.	.09 @	.13
Tar, retort	bbl.	12.00 @	..
kiln burnt	bbl.	12.00 @	..
Pitch, Burgundy	lb.	.04 @	.04½
coal tar	ton	22.00 @	..
rosin	bbl.	6.75 @	7.00
Rosin, grade B. ex-yard	bbl.	5.20 @	..
grade K	bbl.	6.50 @	..
Shellac, T. N.	lb.	.68 @	.69
fine orange	lb.	Nominal	
bleached, ground	lb.	.65 @	.68
bone dry	lb.	.75 @	.78

Solvents

Acetone, drums, c. p.	lb.	.12 @	..
Acetanilid, c. p., bbls.	lb.	.21 @	.25
Alcohol, denatured, 190 proof	gal.	.38 @	.40
wood, 95 per cent, drums	gal.	.77 @	.79
Ethyl, 190 proof, drums	gal.	4.75 @	4.85
Benzol, 90 per cent.	lb.	.25 @	.27
pure	lb.	.27 @	.30
Carbon bisulphide,	lb.	.06½ @	.07½
tetrachloride	lb.	.10 @	.12½
Dimethylaniline	lb.	.40 @	.55
Naptha, motor gasoline, steel bbls.	gal.	.26 @	.28½
68 to 70 degrees	gal.	.35 @	.35½
70 to 72 degrees	gal.	.36½ @	..
73 to 76 degrees	gal.	.37½ @	.38½
machine, steel bbls.	gal.	.26 @	.28
solvent, crude, heavy	gal.	.25 @	.27½
Phenol, (see Acids, carbolic)			
Toluol, pure, drums	gal.	.27 @	.32
Turpentine, spirits, ex-yard	gal.	.65 @	.67
wood	gal.	.63 @	—
Xylol, pure	gal.	.42 @	.45
commercial	gal.	.20 @	.23

Waxes

Beeswax white, pure	lb.	.43 @	.47
Carnauba, No. 1	lb.	.48 @	.50
Ceresin, white	lb.	.13½ @	.15
Bayberry	lb.	.24 @	.26
Montan, crude	lb.	.07 @	.08
Ozokerite, hard, pure	lb.	.30 @	.35
Paraffin, pale, .885 sp. gr.	lb.	.18 @	.21
pale, .903 sp. gr.	lb.	.22 @	..
Petrolatum, amber, bbls.	lb.	.05½ @	..
dark amber	lb.	.04½ @	..

Crude Rubber

The market for crude rubber has fallen by the wayside again. During the fortnight there were fluctuations in the price of smoked ribbed sheets, spot, within a range of 2 cents, and the closing price of the period was 15¾ cents per pound a net loss of one cent. There was more pressure to sell and buying dropped off again to very small proportions.

Declines took place all along the list, and almost all factors in the market were bearish. There was very little buying interest displayed in futures and July-September deliveries dropped from 1 to ½ cent per pound. With the spot market as low as it is now, most consumers show very little disposition to speculate in futures as they are convinced that the market is unlikely to go higher. Factories are buying in small quantities sufficient to cover their current orders for finished materials.

Advices from Singapore and from London have been steady. The Colombo market, which has long been the cheapest rubber center also ruled slightly firmer. However, the volume of transactions in the foreign markets has been so negligible as promise little for the future, and the premium on futures has been an inducement for buyers to avoid commitments on forward contracts.

Some factors were firmer on the high grade Paras, quoting as high as 18 cents for up-river fine, and claiming that this grade was becoming scarcer every day. Other sellers, however, named 17½ cents as their price and stated that supplies of crude rubber were so abundant that a bid for almost any grade could be covered at nearly the buyer's terms. Up-river medium fell off 2 cents, while Islands fine was nominal and unchanged. The coarse dropped 2 cents and was quoted at 8¼ to 8½ cents on the spot.

The disturbing element during May has been the price-cutting activities of the large tire manufacturers. The smaller tire makers who have not been heavily stocked with crude rubber have been hard hit by the reductions for the time being.

A prominent rubber broker in discuss-

ing the situation said, "One of the smaller tire manufacturers had $300,000 worth of orders cancelled when Goodrich initiated the price cut of 20 per cent. Since this manufacturer has been purchasing rubber in small spot quantities to cover such orders as he accumulated from time to time, the heavy cancellations put him out of the market, as well as others in a position similar to his. And it is these smaller consumers who have been the backbone of the current rubber market, since the big tire companies have enough crude rubber to keep them going for many months, in many cases.

"The cuts in the prices of tubes ranged as high as 25 and 30 per cent in some cases, and as these articles are made of pure rubber, there is pressure for lower raw material prices, in order to bring down the manufacturing cost."

The dullness of the mechanical rubber goods trade has also diminished the call for supplies of crude rubber. The mechanical end of the rubber manufacturing industry has been even harder hit than the tire business and has shown less ability to come back rapidly.

Imports of crude rubber during April increased close to 3,000 tons over the preceding month, but were more than 6,000 tons short of the total for April 1920. Imports last month amounted to 17,269 tons, of which 16,861 were plantations, and 403 Paras. Arrivals for the first four months of this year were placed at 54,503 tons against 109,670 in the same period of the previous year. It had been estimated that the arrivals during April would be about 28,000 and the actual receipts fell more than 10,000 tons short.

It was calculated by prominent trade authorities that rubber manufacturers would consume from 25 to 40 per cent more rubber in the current month than during April.

Reports from Amsterdam and London do not encourage the belief that rubber will advance in value for some time to come. As usual very little accurate information is coming from the Singapore district.

The lack of authoritative statistics as to plantation output is as noticeable now as formerly. According to the reports, some plantations have stopped tapping entirely, but it is feared that most planters whether big or little, are sending all the rubber to Singapore and other ports that they possibly can.

Some trade authorities hold to the opinion that the rubber supply from American owned plantations approximates the requirements of their owner-manufacturers nearer at the present time than it did formerly and that their necessary withdrawal to that extent from the open market must in the end affect values adversely.

Ceylons			
Smoked sheets, ribbed, spot	.15¾	@	.16¼
July-Sept. sheets	.17	@	—
Oct.-Dec. sheets	.18	@	.14
Smoked sheet plain, spot	.13½	@	.14
First latex pale crepe	.17½	@	.18
July-Sept. latex	.19	@	.19½
Oct.-Dec. latex	.20	@	—
Amber crepe, No. 1	.14½	@	—
Amber crepe, No. 2	.13½	@	—
Amber crepe, No. 3	.12½	@	—
Clean brown crepe	.13½	@	—
Light clean brown crepe	.14	@	.14½
Roll brown crepe	.11	@	—
Grand Central crepe	.12	@	—
Africans			
Loando Niggers	.07	@	—
*No. 1 Benguella	.07	@	—
*No. 2 Benguella	.06½	@	—
Lapori Ball	—	@	—
Paras			
Up-river fine	.17½	@	.18
Up-river medium	.14	@	—
Up-river coarse	.08½	@	—
Islands fine	.18	@	—
Islands coarse	.08¼	@	.08½
*Madeira fine	.21	@	—
Cameta	.08½	@	—
Centrals			
Corinto prime	.09	@	—
Esmerelda prime	.09	@	—
Miscellaneous			
Guayule wet	.15	@	.18
*Balata block Panama	.34	@	—
Balata sheets	.71	@	.73
Palembang	.06¾	@	—
Bangermassin	.06¼	@	—
Columbian Block Balata	.43	@	—
Prime Pontianac	.06¼	@	—

*Nominal

Scrap Rubber

There has been no change in the extremely lethargic conditions ruling in the reclaimed rubber market. The slightly better feeling noted in our last report, when the crude rubber market was advancing has been dissipated by the heavy reduction in rubber tires.

In the absence of enough actual business to establish market value prices are hardly quotable although the declines in both the crude material and in the finished goods coming at the same time would certainly tend to place value of scrap rubber on a lower basis. Prices have been purely nominal, however, subject to the buyer's conscience or the seller's pressure to liquidate his holdings. Quotations by leading sellers of scrap for prompt shipment were as follows:—

	Cents	per	Pound
Solid Tires	1.50	@	2.00
Auto Tire Peelings	2.25	@	2.50
Truck Tires	1.00	@	1.75
Black Rubber	1.50	@	2.00
Boots and Shoes	2.25	@	—
Arctics, trimmed	2.00	@	3.00
Arctics, untrimmed	—	@	—
Tire—Automobile	.50	@	.75
Bicycles, pneumatic	.50	@	.75
Mixed Hose	.50	@	.75
Air Brake	1.00	@	—
Inner Tubes No. 1	6.50	@	7.00
Inner Tubes No. 2	3.50	@	4.00
Red Tubes	2.50	@	4.00

Akron Stock Prices

(Special Akron Correspondence)

Announcement by tire manufacturers of reductions in prices ranging as high as 20 per cent was accompanied by a decided easier tone in the rubber stock market in Akron.

The prices bid for Firestone and Miller common have dropped to 70 and 65 respectively, while Goodrich is off several points and the rest of the list is from fractions to five points lower.

Goodyear issues have exhibited a new tendency to ease off in the face of completition of refinancing and reorganization. Common is down to 11 and preferred to 31. These shares, however, have been jumping back and forth so rapidly that the investing public in Akron has been paying little attention to them.

Some refinancing is still being done by rubber companies. A recent $10,000,000 bond issue of the Kelly-Springfield Tire Co. was largely oversubscribed. Officials of the B. F. Goodrich Co. have denied a rumor that that company plans some refinancing in the near future.

Following are the quotations in Akron on May 12:

	Bid	Asked
Amer. R. & T. com	42	46
do pfd.	..	80
Amazon Rubber	..	40
Firestone T. & R. com	70	80
do 6 pct. pfd.	87	90
do 7 pct. pfd.	75	80
General T. & R. com	190	225
do 7 pct. pfd.	75	85
B. F. Goodrich com	37¾	38½
do 7 pct. pfd.	80	85
do 5 yr. 7 pct. notes	92½	93½
Goodyear T. & R. com	11	11½
do 7 pct. pfd.	30½	31½
Goodyear 8's	101	101½
India Rubber com	..	100
do 8 pct. pfd.	..	85
Mason T. & R. com	16	17
do 7 pct. pfd.	58	60
Marathon T. & R. com	3	4
Miller Rubber com	65	70
do 8 pct. pfd.	68	72
Mohawk Rubber	110	125
Portage Rubber com	17½	22
do 7 pct. pfd.	33	36
Republic Rubber com	⅝	⅝
do 7 pct. pfd.	9	10½
do 8 pct. pfd.	6	8
Rubber Products	..	50
Star Rubber com	..	100
do 8 pct. pfd.	..	100
Swinehart T. & R. com	..	40
do 7 pct. pfd.	..	70
Phoenix Rubber com	..	18
do pfd.	..	90
Standard Tire com	..	100
do pfd.	..	90

New York Stock Prices

Following are the New York Stock Exchange quotations on the various rubber stocks listed for May 23:

	Bid	Asked
Ajax	31⅜	32
Fisk Rubber Co.	15¼	15¾
B. F. Goodrich Co.	37	38
Kelly-Springfield Tire Co.	43¾	44
Keystone Tire	15	15½
Lee Rubber & Tire Co.	26	26½
U. S. Rubber Co.	72	72½

American Rubber Patents

ISSUED APRIL 26, 1921

1,375,753—To Walter R. Green, Chicago, Ill. Tire-carrier.

1,375,825—To John R. Buechler, Akron, Ohio. Patch for pneumatic tires.

1,376,018—To Thomas E. Kane, Canton, Mass., assignor one-half to Abraham Sydeman, Boston, Mass. Machine for trimming the overflow from the breast of rubber heels.

1,376,048—To Hugo Stommel, Metuchen, N. J., assignor one-half to Harry Raymond, Metuchen, N. J. Pneumatic tire-nipple.

1,376,070—To Daniel M. Boone, Harrisburg, Texas. Tire tool.

1,376,123—To Charles W. Stickel, Rochester, N. Y., assignor to Good Luck Tire & Rubber Co., Buffalo, N. Y. Tire-molding apparatus.

1,376,149—To Frank O. Melin, Omaha, Nebr., assignor one-half to Louis H. Petersen, Omaha, Nebr. Vulcanizer.

1,376,196—To Oscar M. Fredd, Hancock, Mich. Vulcanizing-mold.

ISSUED MAY 3, 1921

1,376,404—To Albert L. Cole, Auburndale, Mass. Demountable rim.

1,376,463—To Ingemar K. Rystedt, Dayton, Ohio. Vulcanizing apparatus.

1,376,579—To Earle Ramsdell, Cleveland, Ohio. Tire-casing-inspecting apparatus.

1,376,723—To Stephen W. Neldner, Milwaukee, Wis. Tire-rim tool.

1,376,739—To Harold M. Bognes, Dayton, Ohio. Automobile tire-holder.

1,376,965—To Frederick Nerger, Chicago, Ill. Resilient heel.

1,376,970—To Andrew T. Pickens, St. Louis, Mo. Pad for attaching valves to tires.

1,376,973—To John A. Schmidtke, Calgary, Alberta, Canada. Tire-filling composition.

1,377,011—To Kinsuke Fukuda, Tokio, Japan. Elastic tire.

1,377,098—To Manly C. Seymour, Hesperia, Mich. Tire-boot.

1,377,133—To Leo Jacobson, Chicago, Ill., assignor to George B. Cooper, Cleveland, Ohio. Apparatus for vulcanizing vehicle-tires.